

WATER RESOURCE MANAGEMENT AND PROTECTION PLAN

RECREATION CHAPTER

CONSERVATION AND PRESERVATION CHAPTER

[MASTER PLAN CHAPTERS

FOR

THE TOWN OF HAMPTON FALLS, N.H.

1993

Prepared for the Hampton Falls Planning Board

By the

The Rockingham Planning Commission

Project Leader - Steven Bird

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CONSERVATION AND PRESERVATION

As development continues to expand into new areas, Hampton Falls must take steps to ensure that conservation areas, recreational areas and historically significant lands are preserved. For discussion purposes, these areas will be referred to as open space. Open space can be described in a number of ways-- it may contain areas of valuable natural resources like farmland, aquifers, forests, floodplains, or wetlands; it may also consist of scenic vistas, recreational areas or historic landscapes.

Too often people consider open space lands to merely be lands which are not currently being used. It is unfortunate that the value of open space is often overlooked. Open space provides many benefits: 1) recreation; 2) buffer areas between developments; 3) screens hiding unsightly features; 4) pleasant scenery, visual relief, maintenance of rural character; 5) food production; 6) wildlife habitat; 7) soil and other natural resource conservation; 8) air purification and production of oxygen; 9) water retention and recharge; and 10) flood control.

Conservation Land

Within Hampton Falls there are numerous parcels of land that are valuable undeveloped properties. A list of conservation land and undeveloped land owned by the Town, State or other group is provided on Table C-1. These parcels are shown on the Conservation and Open Space Map which follows. Some of these parcels are unused vacant pieces of property that are often landlocked. Other parcels may have potential municipal uses for facilities or recreational use. In order to properly utilize these parcels and identify other important areas to focus its preservation efforts, the Conservation Commission should undertake a natural resources inventory. Such an inventory would identify areas that the Commission should concentrate on protecting.

The Audubon Society of New Hampshire owns 19 parcels scattered throughout the salt marsh totaling approximately 333 acres. All of the parcels are shown on the Conservation and Open Space map except for one parcel whose exact location and dimensions are unknown.

The Society for the Protection of New Hampshire Forests owns two small parcels of land in the salt marshes comprising approximately 13 acres. These lots are listed in Table C-1 as parcel numbers 30 and 31.

The majority of the protected land is owned by the Town of Hampton Falls. Some of the parcels were obtained through tax sales and others were purchased by the Conservation Commission. A total of 21 lots owned by Hampton Falls are included in Table C-1 and shown on the map. These parcels total approximately 265 acres of protected land.

The largest of these is the Town Forest located off Drinkwater Road (shown as index number 33 on Table C-1). Purchased by the Town in 1978, the Town Forest consists of 111 acres of forested land. Several small tributaries to the Taylor River run through the property. The parcel was purchased from the Janvrin family using funds from the Town, a Heritage Conservation and Recreational Service grant, a Ford Foundation Grant, and a partial donation from the landowner. The forest is managed by the Conservation Commission, with assistance from a forester. Recreational uses for the forest include walking, hiking, cross-country skiing, fishing and picnicking.

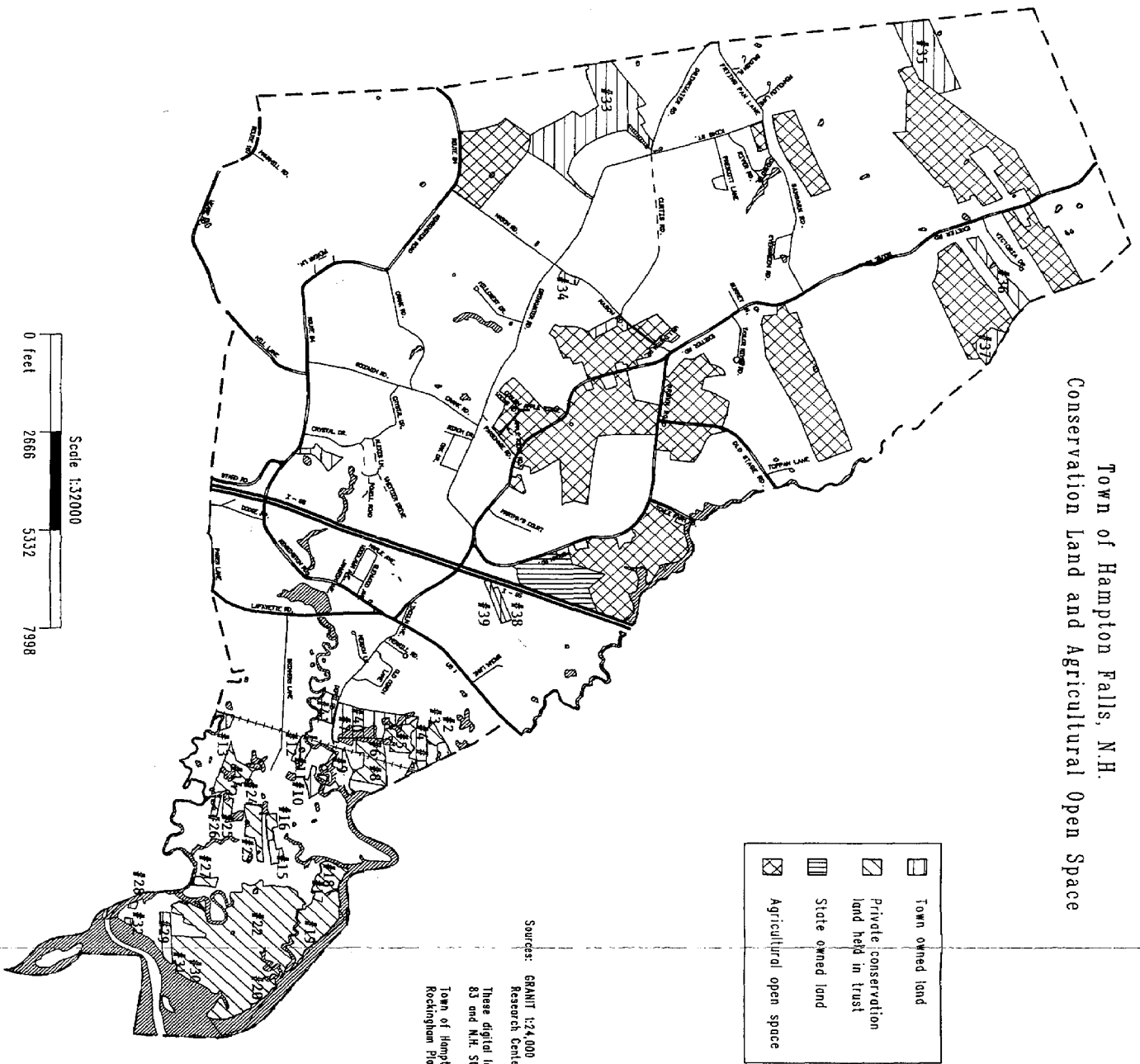
Table C-1
Hampton Falls Conservation Land Map Index

Index No.	Owner	Tax Map No.	Acres	Description/Location
1	Hampton Falls	2-91	12.5	Wetlands near RR tracks
2	Audubon Society	2-92	8.5	Wetlands near RR tracks
3	Audubon Society	2-93	7	Wetlands near RR tracks
4	Hampton Falls	2-94	2	Wetlands near RR tracks
5	Audubon Society	2-97	11.5	Wetlands near RR tracks
6	Audubon Society	2-99	12.6	Wetlands near RR tracks
7	Hampton Falls	2-100	9	Near Depot Road and RR tracks
8	Audubon Society	2-107	13.6	Wetlands east of RR tracks
9	Hampton Falls	2-110	6.5	Abuts Hampton Falls River & RR
10	Hampton Falls	2-114	3.3	South of Hampton Falls River
11	Hampton Falls	2-119	2.2	North of Brimmers Lane
12	Hampton Falls	2-120	2.5	Abuts Hampton Falls River & RR
13	Hampton Falls	2-128	3.3	Abuts Seabrook townline & RR
14	Audubon Society	2-132	14.5	Wetlands north of Browns River
15	Hampton Falls	3-20	5	Wetlands in Hampton Flats
16	Audubon Society	3-23	3.5	Wetlands in Hampton Flats
17	Audubon Society	3-36	5	Wetlands in Hampton Flats
18	Audubon Society	3-37	3.5	Wetland abuts Hampton River
19	Audubon Society	3-38	3	Wetland abuts Hampton River
20	Audubon Society	3-39	3	Wetland abuts Hampton River
21	Audubon Society	3-40	3	Wetland abut Eastman Slough
22	Audubon Society	3-48	225	Wetlands in Hampton Flats
23	Audubon Society	3-113	4	Wetlands in Hampton Flats
24	Audubon Society	3-115	3.5	Wetlands in Hampton Flats
25	Audubon Society	3-120	3	Wetlands in Hampton Flats
26	Audubon Society	3-125	2	Wetlands in Hampton Flats
27	Audubon Society	3-133	2.2	Wetlands abuts Browns River
28	Hampton Falls	3-145	2	Wetlands abuts Browns River
29	Hampton Falls	3-147	2	Wetlands abuts Browns River
30	SPNHF	3-149	10	Wetland abuts Eastman Slough
31	SPNHF	3-150	3	Wetland abuts Eastman Slough
32	Hampton Falls	3-155	7	Wetland abuts Eastman Slough
33	Hampton Falls	4-7	111	Town Forest/Drinkwater Rd
34	Hampton Falls	4-57	8	Nason Road - gift to Town
35	Hampton Falls	6-18	45	Wetlands in the Cove, Conservation easement held by Rockingham Land Trust
36	Hampton Falls	6-42	10	Southeast of Victoria Dr.
37	Hampton Falls	6-68	6	Abuts Ash Brook/Hampton townline
38	Hampton Falls	8-31	2.4	East of I-95/North of Route 88
39	Hampton Falls	8-32	5	East of I-95/North of Route 88
40	Hampton Falls	8-83	14.74	Dedicated open space N/Depot Rd
41	Hampton Falls	8-84-1	5.7	Dedicated open space S/Depot Rd

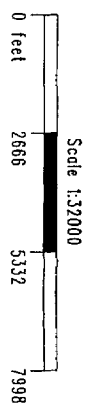
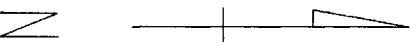
Note: SPNHF = Society for the Protection of New Hampshire Forests, RR = Railroad,

Source: Town of Hampton Falls Tax Assessor records.

Town of Hampton Falls, N.H. Conservation Land and Agricultural Open Space



- Town owned land
- Private conservation land held in trust
- State owned land
- Agricultural open space



Sources: GRANIT 1:24,000 quads from Complex Systems Research Center, UNH, December 1991.
These digital layers are registered to NAD 83 and N.H. State Plane Coordinates.
Town of Hampton Falls Planning Board: 1992.
Rockingham Planning Commission: 1993.



A 5.7 acre Town-owned parcel on Depot Road has a gravel loading ramp for boats and provides public access to Hampton Harbor through the Hampton Falls River for recreational uses such as fishing, canoeing, and pleasure boating. This parcel (number 41 in Table C-1) and a 14.74 acre parcel (number 40 in Table C-1) across the street were donated to the Town in 1977 as dedicated open space by the developer of Old Coach Lane.

In 1989, a 45 acre parcel of land in the northwest corner of Town, was donated by the Bates family to the Town. This land is part of a large wetlands area extending into Exeter and Kensington, called the Cove. The Rockingham Land Trust has a conservation easement for the development rights on the property.

The protection of natural resources and open space is important to Hampton Falls residents. Seventy-three percent of those responding to the citizen survey strongly agreed or agreed that the Town needs more open space. When asked about spending money for acquiring more conservation land, sixty-one percent strongly agreed or agreed. Fifty-two percent strongly agreed or agreed that the Town should acquire additional open space land for conservation. Another question asked residents to rank a number of local problems on a scale of 1 to 5, with 1 being least serious and 5 being most serious. Fifty-two percent ranked the issue of the loss of open space as being most serious or serious.

While the Conservation Commission has actively promoted preservation of open space, no formal plan exists to date for the acquisition of additional open space, conservation or recreation land to meet future needs.

All Town boards, especially the Conservation Commission, play a vital role in protecting natural resources. The Commission should continue to be active in educating and informing the public of the importance of the conservation of natural resources.

Natural Resources

Forests - With increasing residential development, Hampton Falls is experiencing a steady loss of forested land. According to the University of New Hampshire's Department of Forest Resources, Hampton Falls had 3,975 acres of forestland in 1953, 3,855 acres in 1974, and 2,825 acres in 1982. The Town should seek to have forest lands of manageable size (greater than ten acres) preserved and utilized for their many aesthetic, environmental, and economic benefits. As described above, the Town has an actively managed Town forest off Drinkwater Road.

Publicly owned forests provide the townspeople with many benefits: 1) areas for outdoor recreation such as hiking, cross-country skiing, snowmobiling, etc.; 2) local sources of outdoor education in forestry, nature studies, and wildlife; 3) a greater sense of community by adding to the quality of community life. In addition, the sale of timber partially covers the cost of managing the forest, while helping to increase the future yield of forest products.

Proper management allows multiple forest uses. The goals and strategies of proper management is best described in a forest management plan. A forest plan is important for the following reasons: 1) the plan describes to citizens the administration of public resources and provides continuity in the land's management; 2) managed forest stands have greater timber yields, thus greater revenues from wood sales; 3) a management plan may increase the Town's eligibility for federal assistance for forest management practices through the Agricultural Stabilization and Conservation Service (ASCS); 4) if Town lands are well managed, the townspeople are more apt to support

the Town forest activities and may choose to deed their land to the Town, or manage their own lands better.

In addition to UNH, the County Extension Service and the State Forester can assist in the preparation of a forest management plan. The plan will include the location, history, descriptions of timber stands and site factors (i.e. wildlife, water, soils), maps, forest management objectives, management recommendations, and a schedule for plan implementation.

Farmland - As with forestland, Hampton Falls is experiencing a steady loss in agricultural land. According to the UNH study, in 1953 the Town had 1,975 acres of farmland, 1,385 acres in 1974, and 1,125 acres in 1982. In the Existing Land Use Chapter it is estimated that in 1992, there were 856 acres used for agriculture. The Conservation and Open Space map shows the active agriculture operations and land used for agricultural purposes. With only a few sites containing very good agricultural soil, and less than ten farms still active, Hampton Falls should act to preserve these areas. The methods for open space preservation are outlined later in this section.

Wetlands - Wetlands provide many benefits yet pose significant development constraints. Wetlands severely restrict all types of building development because of high water tables, poor drainage, slow percolation rates for septic systems, highly unstable conditions for foundations, and susceptibility to flooding. Costs to overcome these limitations and the associated environmental damage typically prohibit development.

An analysis of Hampton Falls' wetlands and the many benefits they provide are discussed in the Water Resources section of this plan. Briefly, the benefits include: wildlife habitat; silt and nutrient absorption; stabilization of ground and surface water levels; flood water storage; recreation and education; and visual aesthetics. The Wetlands Ordinance presently in place will serve to protect wetlands from encroachment and preserve a vital natural resource.

Because of its coastal location, Hampton Falls has a large amount of tidal wetlands that are subject to flooding by shallow water at high tide. The coastal ecosystem is one of the most crucial areas in need of preservation. The saltmarsh is extremely valuable fish and wildlife habitat and is an integral part of the coastal food chain. The tidal marsh in Hampton Falls is part of the Hampton/Seabrook estuary and encompasses the Hampton River, Taylor River, Hampton Falls River, and Brown's River. Hampton Falls' Wetlands Ordinance explicitly includes tidal wetlands. In order to give the wetlands even more protection, the Conservation Commission should undertake a prime wetlands inventory and prepare the material necessary to get certain wetlands designated as prime.

Floodplains - Hampton Falls is subject to periodic flooding as a result of coastal storms. Low-lying areas adjacent to the rivers and brooks provide temporary water storage during floods, thus serving as natural flood control. One of the State's coastal zone policies deals specifically with floodplain protection. It reads:

"Reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to preserve the natural and beneficial value of floodplains, through the implementation of the National Flood Insurance Program and applicable state laws and regulations, and local building codes and zoning ordinances."

On April 15, 1982 the Federal Emergency Management Agency (FEMA) issued Flood Insurance Rate Maps for Hampton Falls. These maps depict the 100-year flood zones

and specify flooding elevations. In general, the flood zones surround major water courses and follow the coast. Further development should be located away from these low-lying areas because of the flooding potential and the unstable soil conditions. Hampton Falls has adopted floodplain regulations so that the Town can stay in the Regular Phase of the National Flood Insurance Program. This allows residents to be able to purchase flood insurance if their homes are within the flood zones.

Aquifers - As discussed in the Water Resources Management and Protection Plan, the U.S. Geologic Survey has identified and delineated three aquifers in Hampton Falls. The plan recommends that an aquifer protection ordinance be adopted to safeguard these groundwater resources that are crucial to Hampton Falls.

Steep Slopes - Topographic conditions are an obvious natural constraint to development and all types of construction. A slope percentage is the number of feet or rise in land over a 100 foot horizontal distance. For example, a 3% slope implies a three foot change in elevation over the course of 100 feet. The topographic conditions in Hampton Falls have been put into three classifications, namely, 0-8%, 8-15% and 15-25%.

1. Slopes of 0-8% - Land in this percentage category represents areas, in terms of topography only, that are generally well suited for development. These slope percentages provide for adequate runoff and good construction sites. It includes much of the land area in Hampton Falls.
2. Slopes of 8-15% - This slope category has many of the same assets for development in terms of foundation construction and septic tank installation as does the preceding category. However, at 15% slope, the chances of erosion are more pronounced. This problem can be overcome by minimizing the cut into the slope and moving earth only during the drier portions of the year. Where larger developments have been considered, engineering and landscape architectural review should be required prior to approval by the town.

Any road construction through land areas between the 8-15% slope category could present problems. Roads that exceed 10% in slope become difficult to negotiate in the winter months and grades of 12% and above are almost impossible to travel in the winter without a four wheel drive vehicle. These problems of excessive grades can be overcome through road alignment that prevent excessive grades over long distances. In Hampton Falls, there are only a few small areas included in this category.

3. Slopes of 15-25% - Slopes in excess of 15% propose potential environmental constraints because of excessive erosion and lack of soil stability. Sometimes it is economically and environmentally feasible to use cut and fill techniques to reduce this effect on slopes between 15-25%. However, extensive caution must be used during construction to protect unvegetated slopes and to disturb as little of the natural vegetative cover as possible.

Road construction through these areas of steep topography between 15-25% is most difficult, if not impossible. In Hampton Falls there are only a few very small steep areas in the southwestern part of Town.

Planning Approaches for Open Space Protection

The previous section described the benefits of different types of open space lands, and some areas of notable value. However, for a more complete analysis of lands worthy of protection, a natural resource inventory should be performed. Priorities for land protection could then be set based on environmental benefits, imminent threat, accessibility, scenic beauty, recreational potential, fragility, and scarcity. The next step would be to piece together a protective strategy using an appropriate combination of approaches. Purchasing land fee-simple will give the Town ultimate control over its use, but may also be the most expensive means of land acquisition. However, federal and state matching grants can greatly reduce purchase costs.

Options for conservation land protection that the Town should consider include:

- 1) Option or Right of First Refusal - If landowners are not interested in any permanent protection method, they may be willing to grant an option or right of first refusal to the Town. An option establishes a price at which the Town could purchase the land any time during a specified period of years. A right of first refusal guarantees the Town the opportunity to purchase the land for a price equal to a bonafide offer from another party. It provides a legal means for the Town to become aware of a potential sale and an opportunity to respond.
- 2) Purchase and Resale - One possible option the Town could consider is the purchase of the property and subsequent resale of all or part with restrictions or limited development opportunities. In this way, the Town may be able to recoup more than its purchase cost through some creative planning, such as cluster development, on that part of the land not critical to open space benefits. This option would not apply to donated or purchased land that contains conservation easements restricting such resale.
- 3) Bargain Purchase - Buying the land for less than its fair market value reduces the purchase price for the Town and offers tax deductions to the seller. The difference between the fair market value and the bargain sale price may be used as a charitable donation by the landowner.
- 4) Easements or Less-than-Fee-Interests

Conservation Easement - Landowners who do not want to develop their land can sell or, more commonly, give a conservation easement to the Town, and yet retain some property rights themselves. A conservation easement places perpetual restrictions on land use and provides for long term enforcement by the Town.

Purchase of Development Rights - Landowners sell the development rights to the Town, or state, thereby permanently protecting their land from development.

Both of these methods provide potential tax benefits to the landowner.

Regulation and Zoning - Through the adoption of land use regulations, Hampton Falls has already begun to protect environmental quality and public health and welfare. A wetlands ordinance, flood hazard ordinance, and earth excavation regulations are all administered by the Planning Board and enforced by the Board of Selectmen. As

discussed in the Housing Chapter, the adoption of an open space/cluster development ordinance is one way to encourage the preservation of large tracts of open space.

Tax Incentives - There are two ways in which property owners can benefit from keeping their land as open space: 1) Donation - landowners who donate their land, or easement restrictions, can receive tax benefits in the form of federal income tax deductions, potential estate tax benefits, and relief from property taxes. 2) Current Use Abatement Program - authorized by NH RSA 79-A, this program generally provides for reduced property assessments on parcels of field, farm, forest and wetland of 10 acres or more or on "natural preserves" of any size, recreational land of any size, or farmland generating more than \$2,500 annually.

Public Programs - Designation of Prime Wetland: This program permits towns to designate some wetlands as "prime wetlands" because of their size, unspoiled character, fragility or uniqueness. Once prime wetlands are designated, the NH Wetlands Board is required to give special consideration to these areas. The Wetlands Board will not issue a dredge and fill permit without a public hearing. This program provides municipalities with a strong mechanism for protecting wetlands.

Acquisition of Agricultural Land Development Rights: This program is administered by the Agricultural Land Preservation Committee (ALPC) for the N.H. Department of Agriculture and is designed to save important farmland throughout New Hampshire.

If the ALPC designates a farmland parcel as an "agricultural preservation restriction area", (after the landowner has applied to the program for consideration), the state will purchase the landowner's development rights in order to limit the land's use to only agricultural production. Criteria used to make this designation include: soils potential and suitability, threat of development, cost of the development rights, and the present use of the land.

Land and Water Conservation Fund: All New Hampshire communities, school districts, and counties are eligible to apply for 50/50 grants for outdoor recreation and conservation land acquisition and park and playground facility development or renovation. Sites must be dedicated to public outdoor recreation use. Project selection for these limited funds is based upon a numerical rating priority system of project applications. The sponsoring government must have local legislative approval by warrant article or budget item for each specific project.

Pitman-Robertson Funds - The N.H. Department of Fish & Game receives Pitman-Robertson Funds which cover 75% of the fair market value of lands acquired by the Department for wildlife protection.

Conservation Commission - The Conservation Commission, as well as the Selectmen play a critical role in the conservation and preservation of open space in Hampton Falls. Conservation Commissions typically provide information and instruction to other town officials regarding the open space protection methods described above.

Chapter 36-A of the RSA's establishes the right of a municipality to create a conservation commission for the purpose of "proper utilization and protection of the natural resources and for the protection of watershed resources of said town." The commissions also inventory open space, natural, aesthetic, and ecological areas, marshlands, swamps and other wetlands and make recommendations to the selectmen, on the use of such lands. In addition, RSA 36-A:4 allows the conservation commissions to receive gifts of property or money that are intended for conservation purposes, subject to the approval of the selectmen. The commission is then responsible for managing the acquired land.

In 1988 the State Legislature amended RSA 79-A and RSA 36-A to allow a municipality to vote to allocate all or a percentage of the current use change tax to the conservation fund. A Town Meeting vote is required for this to be instituted. The Conservation Commission should propose that 100% of the current use change tax be allocated to the conservation fund. This will provide more funds to protect open space.

The conservation of valuable and unique natural resources and the preservation of open space is important for Hampton Falls. It is one way to maintain the community's character in spite of its continued growth. All the Town boards, especially the Conservation Commission, play a vital role in this endeavor.

Historic Preservation

The Town of Hampton Falls contains a valuable architectural heritage which makes an important contribution to the character of the Town. The older structures are aesthetically pleasing, as well as being of historical value. They appear to be good to excellent condition, and are frequently surrounded by open space (orchards or former farmland).

The Hampton Falls Center fits the popular ideal of a small New England town. A Greek Revival style church (1836) and several other buildings primarily from the 19th century surround the green or common. There are several other fine houses in the general proximity of the green, including a brick Federal house and the Governor Weare House, both built in the 18th century. The town center is predominantly 19th century construction with houses of the Federal, Greek Revival and Italianate styles.

Another cluster of importance is found in the area which includes the Hampton Falls Library (1835) and the Town Hall (1878). Further west is the Unitarian Church, stylistically suggesting a Greek Temple.

Throughout the Town there are several excellent examples of 18th and 19th century architecture. These dwellings line what were probably early transportation routes. Drinkwater Road, King Street and Exeter Road are flanked by several 18th century dwellings. Kensington Road (Route 84) passes 18th century mill sites. Brown Road exhibits 18th and 19th century houses as well as a large amount of open land, much of it surrounding 19th century farm complexes. One such complex includes a high style example of French Second Empire architecture. Throughout the Town, open land contributes to the visual beauty of Hampton Falls and increases the visual value of the older houses.

For the most part, modern building has taken place away from the older structures; thus the streetscape in the older sections of the Town has not been greatly altered. One exception is Route 1, north of the Town Center, where there are older houses of significance, and a large amount of new development which is not wholly compatible.

Two areas where there appear to be natural historic districts are:

- 1) Exeter Road (Route 88) from the Town Center to the Exeter Town Line, Brown Road, Route 1 from Depot Road to Brimmers Lane, and Kensington Road (Route 84) from Route 1 to Interstate 95; and
- 2) King Street and Drinkwater Road from the intersection of Curtis Road to Grapevine Run.

The visual and historic character of these two areas could be protected either by local historic district ordinances, by nomination to the National Register of Historic Places, or by other measures which would be acceptable to the townspeople and constant with the overall objectives of the Town.

There are also individual structures and sites worthy of both local and national preservation consideration.

Hampton Falls has a very active Historical Society which seeks to protect the historical resources of the Town and to educate the public about those resources.

RECREATION

Being located in the coastal region of New Hampshire, Hampton Falls is close to many recreational areas. However, the recreational opportunities in Town are relatively limited. In the past, much of the recreational activity probably occurred in the numerous open fields and large backyards in Hampton Falls. As a community grows, the availability of recreational facilities becomes more important. Additional playgrounds and ballfields are required to meet the needs of the community. Adequate recreational facilities contribute to the "quality of life" for the residents of Hampton Falls.

At the 1992 Town Meeting, the Hampton Falls Recreation Commission was created to coordinate recreation programs for the Town. Comprised of five volunteers appointed by the Selectmen, the Commission works to provide residents with opportunities to participate in social, creative, and physical activities. In their first year of existence, the Commission assisted with scheduling non-school usage of the gymnasium at the Lincoln Akerman School, and organized programs for youth floor hockey, youth basketball, and art lessons.

Existing Recreational Facilities

Most of the recreation areas in Hampton Falls are natural areas used for passive recreational activities such as walking, hiking and picnicking. The Hampton Falls Conservation Commission owns a number of these parcels of land which are open for public use.

The largest of these is the Town Forest located off Drinkwater Road. Purchased by the Town in 1978, the Town Forest consists of 111 acres of forested land. Several small tributaries to the Taylor River run through the property. The parcel was purchased from the Janvrin family using funds from the Town, a Heritage Conservation and Recreational Service grant, a Ford Foundation Grant, and a partial donation from the landowner. The forest is managed by the Conservation Commission, with assistance from a forester. Recreational uses for the forest include walking, hiking, cross-country skiing, fishing and picnicking.

A small Town-owned parcel on Depot Road has a gravel loading ramp for boats and provides public access to Hampton Harbor through the Hampton Falls River. This parcel provides public access for recreational uses such as fishing, canoeing, and pleasure boating.

The Town Common at the junction of Route 1 and Route 88 is a small parcel of 1.15 acres. This area has been available for fairs, parades and other similar events.

The Hampton Falls Volunteer Fire Association owns a park off Route 84 which is approximately 4 acres and is available to residents by request for picnicking and ballplaying.

The Lincoln Akerman School is one of the major recreational facilities for the community. There is a multi-purpose athletic field, a playground and a gymnasium at the school. In addition to the youth athletic program, the school is used by many other groups. The gymnasium is used for organized floor hockey and basketball games. When the school's gymnasium is busy, the First Baptist Church allows the Town to use it's indoor basketball court.

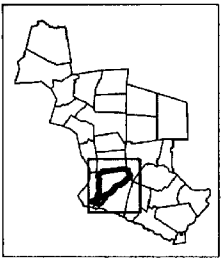
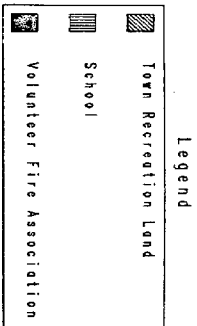
Whittier Pond is an 11 acre water body located between Route 1 and Route 84. The pond is used in the winter for ice skating and parking is provided by a private landowner near the pond.

A list of recreation land owned by the Town, School or other groups is provided on Table R-1. Each of the recreational land areas is shown on the Recreation Land Map which is attached.

**Table R-1
Hampton Falls Recreation Land Map Index**

Index #	Owner	Tax Map #	Acres	Description/Location
1	Town	4 - 7	111	Town forest/Drink-water Road
2	Town	8 - 88	.33	Town Common/Route 1 and Route 88
3	Town	8 - 84-1	5.7	Boat landing/Depot Road
4	Volunteer Fire Association	8 - 96	4	Park and ballfield/Route 84
5	School District	8 - 27 8 - 28-2	2	Lincoln Akerman School/Route 88
6	Town	-	5	Whittier Pond/Route 1

Town of Hampton Falls, N.H. Recreation Land

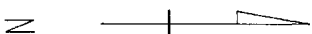
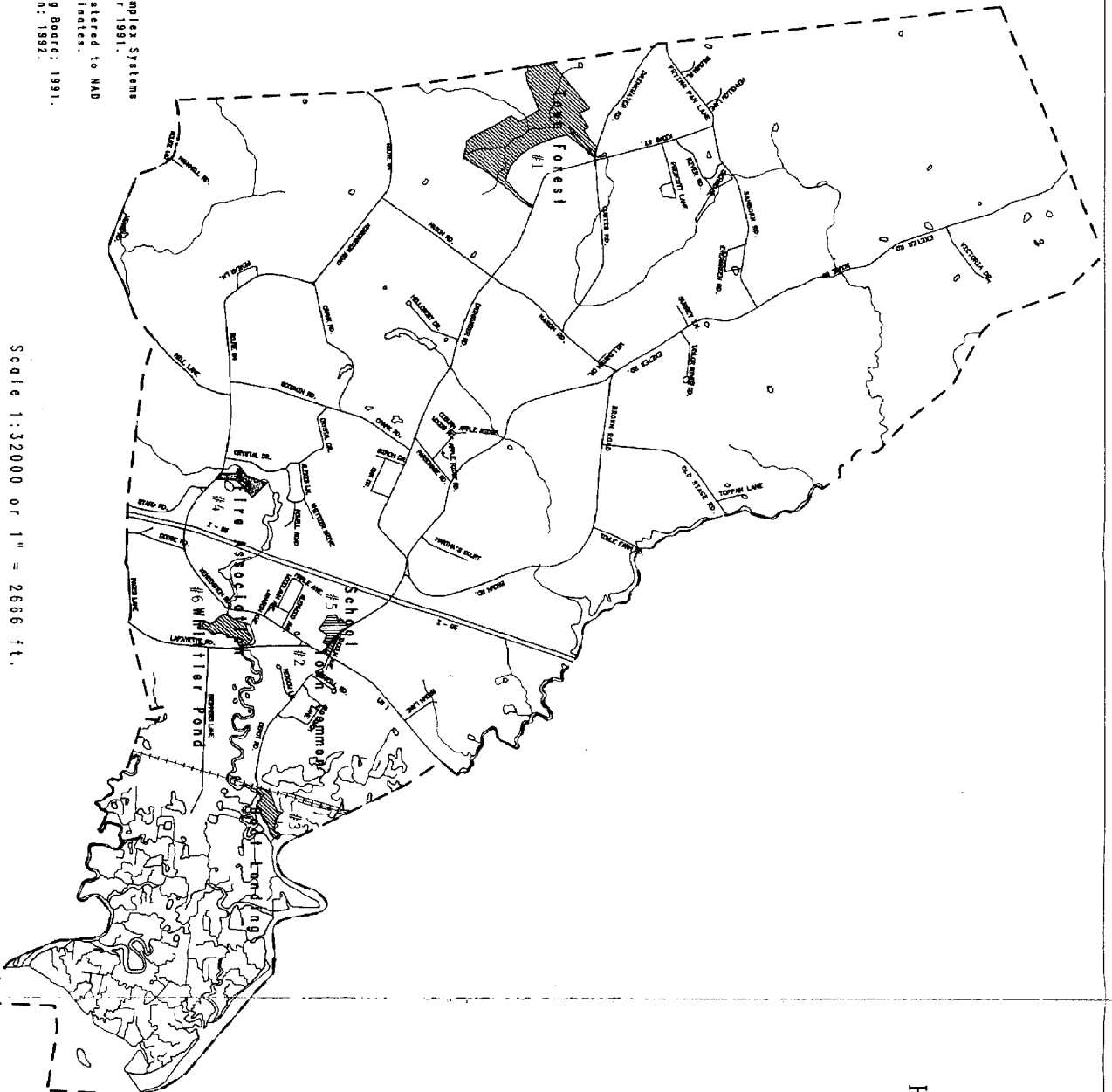


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These digital layers are registered to MAD 83 and N.H. State Plane Coordinates.
Town of Hampton Falls Planning Board: 1991.
Rockingham Planning Commission: 1992.



Scale 1:32000 or 1" = 2666 ft.

0 feet 2666 5332 7998



Hampton Falls' proximity to New Hampshire's coastal shoreline provides many recreational opportunities for townspeople. Hampton Beach State Park is a short drive north in Hampton and other beaches and state parks are available in the area.

Importance of Recreational Areas

Open space for recreation serves a variety of purposes and in many ways becomes an economic necessity if a community is to continue as a desirable place to live. Included in this category is open space that provides a natural or green area just for walking or looking. This provides relief from the normal suburban development. The purposes of open space for recreation are:

1. To provide space for recreational activities that individuals could not provide for themselves;
2. To improve a community's attractiveness;
3. To preserve and conserve a reasonable balance of nature and keep development from occurring in areas that would be harmful or uneconomical to the community;
4. To prevent overcrowding and repetitious development.

There is some thought that a community cannot afford to have a single piece of property taken off its tax roll to provide public open space for recreation. This is a common mistake since actually, a well conceived system of open space creates increased tax values.

Master Plan Questionnaire Results

Six of the questions on the Planning Board's 1991 Master Plan Questionnaire dealt specifically with recreation issues. The results to the questions are provided in Table R-2. The first four questions asked residents to react to a series of statements by indicating their level of agreement or disagreement. Overall, recreation issues fared poorly in comparison with other issues. Only 45 percent of the respondents strongly agreed or agreed that more recreational areas and facilities should be provided. Only 31 percent showed any support for developing a Town playing field and only 16 percent supported developing tennis courts. However, over 77 percent of the people wanted existing Town land to be well marked and access provided. One question asked what they thought the Town needs more of. Of the 13 choices, recreational facilities ranked 10th. Choices that were more desired than recreational facilities included retail stores, restaurants, and industry.

When asked what capital expenditures they thought were important, residents ranked recreation facilities fifth out of eight choices.

It should be noted that the questionnaire was conducted prior to the formation of the Recreation Commission. Their work has likely raised the awareness of recreation needs in Hampton Falls. A similar survey today may have different results. The specific results are provided below.

**TABLE R-2
RESULTS OF MASTER PLAN QUESTIONNAIRE**

Statement	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
Recreational areas and facilities should be provided in the Town.	83 18%	128 27%	89 19%	102 22%	70 15%
Existing Town land should be well marked and access provided.	172 36%	195 41%	68 14%	27 6%	11 2%
Hampton Falls should develop a Town playing field.	40 8%	108 23%	80 17%	119 25%	130 27%
Hampton Falls should develop Town tennis courts.	26 6%	48 10%	77 16%	135 28%	189 40%
Question	Badly Needed	Desirable	No Opinion	Not Needed	Don't Want
Does Town need more recreation facilities?	33 9%	118 31%	61 16%	122 32%	46 12%
Are capital expenditures for recreation facilities important?	24 6%	100 26%	53 14%	147 38%	59 15%

Totals may not equal 100 percent due to rounding.

Town Funding For Recreation

Even though the Master Plan questionnaire indicates that the residents of Hampton Falls feel that recreational facilities are not a high priority, the Town has appropriated some funds for recreation purposes in recent years. At the 1992 Town Meeting the voters agreed to raise

\$2,500 to match an equal amount raised by the Parent Teacher's Organization for the purchase of equipment for the playground at the Lincoln Akerman School. In 1993 the Town voted to appropriate \$10,000 to match an equal amount from the School District, to improve the school's athletic field, which is available to the Town for recreation purposes. Hampton Falls' budget for parks and recreation in 1993 was \$5,000, which equals approximately \$3.25 per resident.

The Recreation Commission should strive to develop additional support for providing more recreational facilities and activities. Recreation sites should be considered for the more populated areas of Hampton Falls. Recreation areas should be accessible for children and adults as well.

The N.H. Office of State Planning has developed standards for recreation facilities for New Hampshire communities. These standards are provided below, along with the standard applied to Hampton Falls based on a 1991 population estimate of 1,528:

<u>Facility</u>	<u>Standard/1000 people</u>	<u>Standard Applied to Hampton Falls</u>
baseball diamonds	1.1	1.7
basketball courts	0.8	1.2
boat/fishing access	1.8	2.8
golf courses (18 holes)	0.04	0.06
gymnasiums	0.25	0.4
ice skating area	0.14	0.2
open space/natural areas(ac.)	51	77.9
picnic tables	8	12.2
parks, community (acres)	6	9.2
playgrounds (town & school)	0.5	0.8
playgrounds (acres)	2.1	3.2
skiing (x-country areas)	0.1	0.2
soccer fields	0.16	0.2
swimming beach	0.5	0.8
tennis courts	0.95	1.5
trails, hiking	2.2	3.4

In general, the Town meets or exceeds the standards for the passive recreational areas, but is below standards for the more active recreational facilities. These standards are useful for the Recreation Commission to gauge where the Town stands and where improvements need to be made.

DRAFT

**WATER RESOURCE MANAGEMENT
AND
PROTECTION PLAN
FOR
THE TOWN OF HAMPTON FALLS, N.H.**

1993

Prepared for the Hampton Falls Planning Board

By the

The Rockingham Planning Commission

Project Leader - Steven Bird

The preparation of this document has been financed in part by a New Hampshire Coastal Program grant funded by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resources Management, National Oceanic and Atmospheric Administration.

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TOWN OF HAMPTON FALLS

WATER RESOURCES MANAGEMENT AND PROTECTION PLAN

Introduction

This component of the Town of Hampton Falls Master Plan addresses the requirements established by the NH Office of State Planning under the authority of RSA 4-C:20, I, for the preparation of a local water resource management and protection plan.

The goals of this document are to:

- identify and evaluate the adequacy of existing and potential water supply sources to meet the current and anticipated water demands of the community;
- identify existing and potential threats to surface and groundwater resources;
- evaluate existing local programs, policies, and regulations as they relate to water resources; and
- identify regulatory and non-regulatory programs that would benefit the Town in its water resource management and protection efforts.

The protection and wise use of water resources are of critical concern to the community. With the entire population dependent on groundwater, from both private wells and public water systems, the quantity and quality of this resource must be protected from excessive depletion and/or contamination. Other water resources such as swamps, ponds, rivers, streams, and wetlands are important not only because of their hydrological connection to groundwater resources, but also because they provide ecological, scenic, and recreational value to the community as a whole. In general, there is a direct relationship between land use and water quality. It is the responsibility of the Town to take reasonable precautions to protect all water resources from incompatible uses and, in so doing, protect the health and general welfare of the community.

Regarding the source information (both data and maps) used to describe and map the water resources of Hampton Falls, the municipality considers such information to be, at a minimum, as detailed and accurate as the maps and information replaced. The municipality considers the source information to be the best available information existing at this time.

I. DESCRIPTION OF SURFACE WATER RESOURCES

Surface water systems are any type of water resource located above the ground on the earth's surface. Examples of surface water systems include: streams, rivers, marshes, ponds, bogs, lakes, wetlands, etc. Surface water systems are more dynamic than groundwater systems, in that they are influenced by the effects of wind, rain, and temperature. They are also subject to varying rates of flow, such as the difference between the flow rate of a river as opposed to that of a pond.

Since surface water systems flow over the land's surface, they are more susceptible to pollution caused either by hazardous materials located in close proximity to the system, or by pollutants discharged directly into the water. There are two types of pollution source categories: nonpoint sources and point sources. A nonpoint pollution source travels over or under the land to the water resource, whereas a point pollution source discharges directly into the water resource, for example, a malfunctioning sewage treatment plant.

Surface water resources function as holding areas for flood waters and seasonal high waters. In addition they serve as recharge areas and discharge points for groundwater resources. The point of discharge is where the surface water resource and the groundwater resource are hydrologically connected. Most commonly, a surface water resource will act as a discharge point for groundwater. Such a discharge can replenish surface water resources as well as individual water wells during the dryer summer months. However, if dry periods are prolonged, the result can be an overall lowering of the water table.

Regional Watersheds

The watershed is the principal focus in describing a surface water system. A watershed is the land area within a series of connecting higher ridges that drain surface water to the lowest point, which is where a stream or river flows out of the watershed. The network formed by rivers, streams, lakes, and ponds is known as the drainage system of the watershed.

The Town of Hampton Falls is located within two regional watersheds - the Exeter River watershed and the Coastal watershed. The watershed boundaries shown on Map A - "Regional Watershed Boundaries" - were delineated by the Rockingham Planning Commission using 7.5 minute topographic maps from the U.S. Geological Survey.

The following paragraphs provide a general description of each regional watershed.

- a. Exeter River watershed: This watershed covers a portion of 14 communities in southeastern New Hampshire (see Map A), including a small portion of Hampton Falls and the abutting communities of Exeter and Kensington. The watershed area is approximately 67,765 acres (106 sq. mi.), with Hampton Falls' portion consisting of about 514 acres (0.8 sq.mi.). The Exeter River flows through the watershed for a length of approximately 32 miles before emptying into the tidal Squamscott River. There are no surface waterbodies, other than a large wetlands area, within the Hampton Falls portion of the Exeter River watershed.
- b. Coastal watershed: The receiving water bodies of the Coastal Watershed are the Piscataqua River and the Atlantic Ocean. The Piscataqua River originates in Rollinsford, NH and is fed by the Salmon Falls, Cochecho, and Bellamy Rivers. The Piscataqua River is tidal and flows along the shores of Newington, Portsmouth, and New Castle for about seven miles before emptying into the Atlantic Ocean. New Hampshire's ocean-front shoreline is approximately 18 miles long. The area of the Coastal watershed is about 50,097 acres (78 sq.mi.). The area of the Coastal watershed within Hampton Falls is about 7,358 acres (11.5 sq.mi.).

Watersheds Within Hampton Falls

The Hampton Falls portion of the Exeter River watershed is so small that it has no sub-watersheds. The Coastal watershed has many sub-watersheds, including three that contain portions of Hampton Falls. The characteristics of these sub-watersheds are described below. Information is provided regarding the watershed's total acreage, acreage within Hampton Falls, number of waterbodies, number of watercourses, and other communities within the watershed.

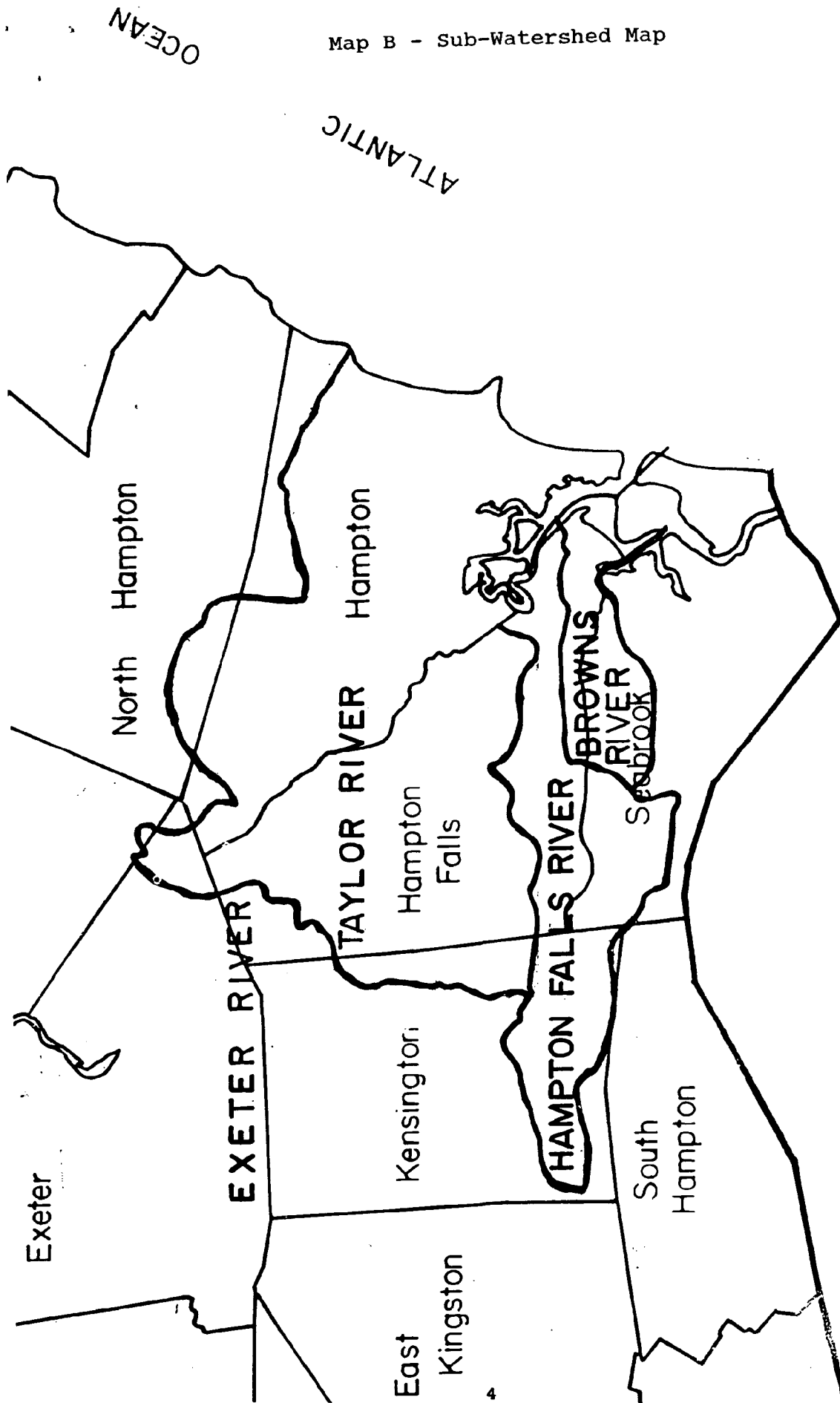
Map B - "Sub-Watershed Map" is a regional map which shows the location of Hampton Falls within the Exeter River Watershed, and the Taylor River, Hampton Falls River, and Browns River sub-watersheds.

The accompanying "Watersheds and Surface Waters Map" - (Map C) shows the location of the watershed divides within Hampton Falls, as well as the location of all waterbodies and streams within Town.

1. Taylor River sub-watershed: The largest sub-watershed in Hampton Falls is the Taylor River sub-watershed, which is part of the Coastal watershed. It includes portions of Exeter, Stratham, North Hampton, Hampton, Kensington, and Hampton Falls. The entire watershed is 14,437 acres (22.6 sq. mi.), with 5,138



Map B - Sub-Watershed Map



ESSEX COUNTY
MASSACHUSETTS

Map C - Watersheds and Surface Waters Map

acres (8.0 sq. mi.) in Hampton Falls. Within this sub-watershed there are 11 perennial watercourses, including Ash Brook, Clay Brook, Grapevine Run, and Kenney Brook. Information on these watercourses and 7 unnamed watercourses is provided in Table 1. There are no surface water bodies, such as lakes or ponds, within this watershed.

2. Hampton Falls River sub-watershed: As shown on Map B, the Hampton Falls River sub-watershed contains 3,996 acres (6.2 sq. mi.) in Kensington, Seabrook, and Hampton Falls. It is part of the larger Coastal watershed. Within Hampton Falls, the sub-watershed is 1,577 acres (2.5 sq. mi.). There two perennial watercourses and five ponds located within the Hampton Falls portion. One of the watercourses is unnamed and the other is Winkley Brook. The ponds, located along the Hampton Falls River, are Whittier Pond and a series of four other ponds named the Dodge Ponds. Detailed information on the watercourses is provided in Table 1. In Table 2 information on the ponds is provided.
3. Browns River sub-watershed: The Browns River sub-watershed is located in Seabrook and Hampton Falls and is 1,517 acres (2.4 sq. mi.). Within Hampton Falls, the sub-watershed is 691 acres (1.1 sq. mi.). As part of the Coastal watershed, the area contains a large area of salt marshes. Located within the sub-watershed are Swains Creek and two unnamed watercourses. Detailed information on the watercourses is provided in Table 1. There are no surface water bodies in the watershed.

**TABLE 1
HAMPTON FALLS WATERCOURSES**

Watercourses	Length (miles)	Elevation (feet)	Watershed Location	Impounded/ Freeflowing

Taylor River	11.4	55 to 0	Taylor River	Impounded
Ash Brook	0.3	40	Taylor River	Freeflowing
Clay Brook	0.5	30 to 20	Taylor River	Freeflowing
Grapevine Run	1.6	60 to 10	Taylor River	Freeflowing
Kenney Brook	1.2	40 to 10	Taylor River	Impounded
Winkley Brook	1.3	70 to 55	Hmptn Falls Ri.	Freeflowing
Browns River	2.2	20 to 5	Browns River	Freeflowing
Swains Creek	0.9	5	Browns River	Freeflowing
Stream T-1	1.1	60 to 55	Taylor River	Freeflowing
Stream T-2	0.5	55	Taylor River	Freeflowing
Stream T-3	0.2	55	Taylor River	Freeflowing
Stream T-4	0.5	40	Taylor River	Freeflowing
Stream T-5	0.4	35	Taylor River	Freeflowing
Stream T-6	0.2	35	Taylor River	Freeflowing
Stream T-7	0.7	20	Taylor River	Impounded
Stream H-1	0.7	60 to 40	Hmptn Falls Ri.	Freeflowing
Stream B-1	0.3	10	Browns River	Freeflowing
Stream B-2	0.4	10	Browns River	Freeflowing

Note: All information in Table 1 is based on the watercourse within Hampton Falls. Sources: USGS topographic maps, Water Resource Division dam records, and RPC analysis.

**TABLE 2
HAMPTON FALLS WATERBODIES**

Waterbody	Surface Area (acres)	Elevation (feet)	Watershed Location	Impounded or Freeflowing

Whittier Pond	11	20	Hampton Falls River	Impounded
Dodge Pond #1	6	40	Hampton Falls River	Impounded
Dodge Pond #2	4	40	Hampton Falls River	Impounded
Dodge Pond #3	2	20	Hampton Falls River	Impounded
Dodge Pond #4	0.7	20	Hampton Falls River	Impounded

Sources: USGS topographic maps, Water Resource Division dam records, and RPC analysis.

Hampton Falls Surface Water Quality

In New Hampshire, each surface waterbody and watercourse has a legislative classification of A, B, or C, as identified in RSA 149:3. The classifications are defined below.

Class A Waters - Of the highest quality and potentially acceptable as public water supply sources after disinfection. No sewage or wastes shall be discharged into these waters.

Class B Waters - Of the second highest quality and no objectionable physical characteristics. No sewage or waste shall be discharged into these waters unless they have been adequately treated. Acceptable for bathing and other recreational purposes and, after treatment, for use as public water supplies.

Class C Waters - Acceptable for boating, fishing, or for industrial water supply, either with or without treatment. These waters cannot be used as a public water supply source.

Currently, all of the Town's waterbodies and watercourses have received a Class B rating from the State Legislature.

Wetlands

The Town of Hampton Falls Wetlands Conservation District is defined as those areas in Town that contain fresh and salt marshes, ponds, bogs, lakes, streams, rivers, as well as soils that are defined as poorly drained or very poorly drained by the National Cooperative Soil Survey conducted by the USDA Soil Conservation Service (Section 8-B,1 of the Zoning Ordinance).

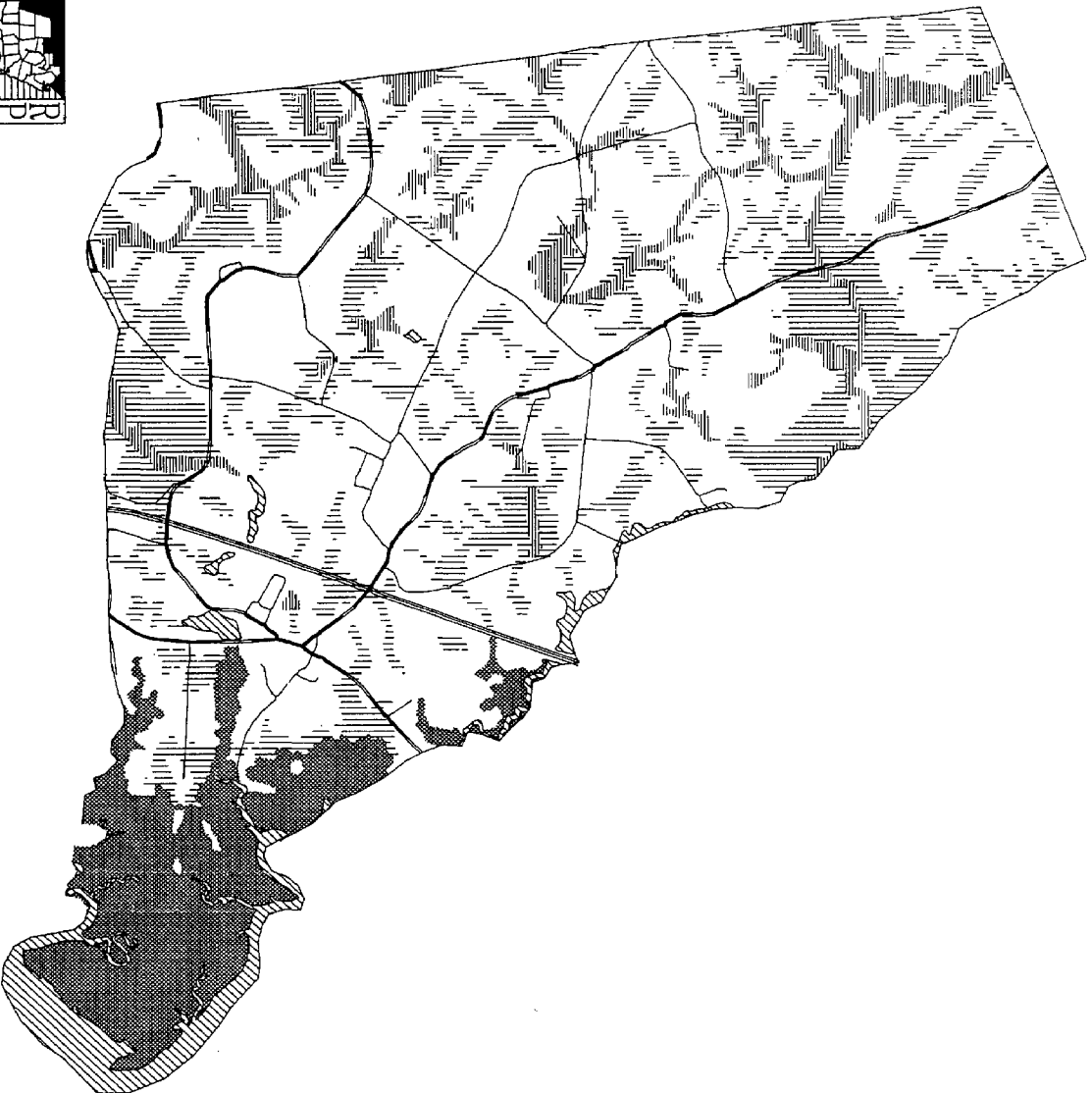
Map D - "Wetlands", which depicts the location of wetland areas is included on the following page. This map was created by digitizing the County soil survey sheets onto the Rockingham Planning Commission's Geographic Information System (GIS). The County soil survey sheets were taken from the soon to be published Soil Survey of Rockingham County, New Hampshire, prepared by the USDA Soil Conservation Service. Although this document has yet to be published, the actual soil survey sheets have been available to municipalities for the past several years. Prior to this document, the main source for soils information was Soils Information For Resource Planning - Town of Hampton Falls, prepared by U.S. Department of Agriculture - Soil Conservation Service and the Rockingham County Conservation District in March 1980.





Wetland soils were digitized onto the Hampton Falls Soils Map by Rockingham Planning Commission personnel in October, 1991. The publication, Soil Potentials for Development: New Hampshire Seacoast Area, prepared by the Rockingham and Strafford County Conservation Districts in 1985, was used to identify wetland soil areas in Hampton Falls. Along with identifying all soil properties found within the two counties, this publication rates soils in terms of three development categories: soil suitability for on-site septic systems, dwellings with basements, and local road construction. The ratings for these three categories were then combined to form an overall development rating for every soil property identified in both counties. The soil development rating matrix used in the above publication is presented in Appendix A of this document.

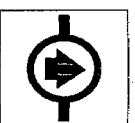
The amount of wetland soils in Hampton Falls was calculated from Map D by Commission personnel using the digitized information from the GIS. Wetland soils were broken down by the number of acres of poorly drained soils and very poorly drained soils. Table 3 shows the number of acres of wetland soils for the entire Town, and goes further by identifying the amount of wetland soils within the Exeter River Watershed, Taylor River Sub-Watershed, Hampton Falls River Sub-Watershed, and the Browns River Sub-Watershed.

Town of Hampton Falls -- Wetland Soils

Map D - Wetlands



-  Water
-  Poorly Drained
-  Very Poorly Drained
-  Tidal Wetland (Very Poorly Drained)



Sources:

Complex Systems Research Center, UNH;
February 1990. Soils delineation based
on field work, conducted by the USDA Soil
Conservation Service, completed in 1985.
Preliminary Data - Subject to Change.

Prepared by the Rockingham Planning
Commission, October 1991. SRG



TABLE 3 - ACREAGE OF HAMPTON FALLS WETLAND SOILS

Regional Watersheds:	EXETER RIVER	COASTAL			
Sub-watersheds:			Hampton Falls River	Browns River	Town Total
Soil Category	Exeter River	Taylor River			

Very Poorly Drained	82	328	98	0	508
Tidal V. Poor. Drained	0	142	328	352	822
Poorly Drained	116	1,163	405	31	1,715
Total Wetland Soils	198	1,632	831	383	3,045

As seen in Table 3, there are 3,045 acres of wetland soils in Hampton Falls. Wetlands comprise approximately 39% of the entire Town, with 22% being poorly drained soils, 7% being very poorly drained soils, and 10% being very poorly drained tidal soils. The 822 acres of tidal wetlands are an important part of the overall Hampton/Seabrook estuary. Development should be located away from wetlands. The filling of wetlands for building construction not only destroys wetlands and their benefits, but may also lead to groundwater contamination.

Floodplains

A Flood Insurance Rate Map was prepared for the Town by the Federal Emergency Management Agency (FEMA) in 1982. The National Flood Insurance Program, administered by FEMA, allows residents living in flood hazard areas to purchase flood hazard insurance at subsidized rates, however, the insurance is only made available to communities which participate in the program. In order to maintain the town's participation in the program, the Zoning Ordinance was amended in 1990 to adopt the required model floodplain development ordinance.

The flood hazards in Hampton Falls are shown on Map E - "Flood Hazards and Bedrock Geology." In general, the flood hazard zones include the tidal marsh areas in the eastern portion of Hampton Falls and follow the Taylor River and the Hampton Falls River. The portion of Hampton Falls falling within the flood hazard boundary was calculated by Commission personnel using a planimeter. Table 4 below indicates the acres of flood hazard areas in Hampton Falls. The table breaks the total acreage down by major and minor watersheds.

TABLE 4 - HAMPTON FALLS FLOOD HAZARD AREAS

Watershed	Acres Within the Flood Hazard Areas
*****	*****
Exeter River Watershed	156 Acres
Taylor River Sub-Watershed	840 Acres
Hampton Falls River Sub-Watershed	627 Acres
Brown's River Sub-Watershed	392 Acres
Town Total	2,015 Acres

Development should be located away from floodplain. Building within a flood zone may reduce the floodplain's capacity to absorb and retain water during periods of excessive precipitation and runoff. Moreover, in regard to building within floodplains, contamination may result from flooding damage to septic systems. Without specific flood-proofing design and construction, development within floodplains poses threats to public health, safety, and welfare.

Map E - Flood Hazards and Bedrock Geology

Withdrawal and Discharge Information

Withdrawal and discharge information is to be filed with the Water Resources Division of the NH Department of Environmental Services in accordance with the provisions of the NH Code of Administrative Rules Wr 700. According to a recent review of DES records, there are no major users of surface water resources in Hampton Falls. The State's definition of a major surface water user is any operation using at least 20,000 gallons of water a day.

Potential Surface Water Supplies

All of the Town's surface water resources currently maintain Class B status, as defined by the NH State Legislature. Hampton Falls does not use any portion of its surface water resources to meet the community's water supply needs, and there are no plans to utilize the Town's surface water resources for such a purpose within the planning period (approximately ten years). None of the Town's ponds are of sufficient size to be used as a municipal water supply.

The Town's groundwater resources are much more likely to service the future water supply needs of community residents. These resources will be described in the next section.

II. DESCRIPTION OF GROUNDWATER RESOURCES

Regarding the source information (both data and maps) used to describe and map the groundwater resources of Hampton Falls, the municipality considers such information to be, at a minimum, as detailed and as accurate as the maps or information required to be used by the administrative rules. The municipality considers the source information used in this section to be the best available information existing at this time.

Groundwater Resources

Groundwater is a concentration of subsurface water, occurring in saturated soils and geological formations. It is resupplied through precipitation and surface water discharge. The water infiltrates the ground through an aerated zone where impurities are filtered out. The water then moves to a saturated zone where the pore spaces between soil particles are filled by the water. These saturated zones are called aquifers. It is very important that the earth's surface be able to transmit water so that a certain percentage can be stored underground as "groundwater". If excessive compaction or extensive covering of the earth's surface occurs, the amount of water that can reach the saturated zone and become groundwater is reduced.

Aquifers (concentrations of groundwater) are found where saturated layers are permeable and the storage and transmission of water can take place. Aquifers having medium to high potential to yield groundwater occur in the New Hampshire seacoast area as alluvial deposits of sand and gravel (unconsolidated deposits) or in bedrock fractures (consolidated deposits). The major source of recharge to the aquifers of the seacoast area is through precipitation directly onto the aquifer's surface. In terms of the hydrologic cycle, approximately one-half of the average annual precipitation in the seacoast area is returned to the atmosphere as evapotranspiration. The other half is split between surface water discharge and groundwater storage.

The unconsolidated deposits, also called stratified drift deposits, contain sorted layers of gravel, sand, silt and clay. They are found primarily along valley bottoms. These materials have abundant pore space to store water, in fact, these pore spaces can account for more than 30% of the deposit's total volume. Consequently, these stratified drift deposits of sand and gravel have become good sources of medium to high volume aquifers.

Bedrock fractures normally do not yield the same quantity of ground-water that stratified drift deposits do, however, they cannot be overlooked in terms of contributing to a community's water supply needs. Bedrock fractures are more productive when the bedrock has a layer of sand and gravel over it. This allows recharge to occur directly from above. Bedrock fractures are usually adequate for domestic wells serving a small population. In contrast, a till aquifer is usually lower yielding and can have a short well life. This is due to a mixture of clay, silt, gravel and boulders which tends to compact due to the different soil particle sizes. The transmission and storage of water is greatly reduced in this type of aquifer.

The most common types of aquifers occur in two conditions, confined and unconfined. Confined aquifers have a layer of impermeable material over them such as clay. Unconfined aquifers have a layer of permeable material so that recharge occurs directly from above. The water table (the top of the saturated zone) fluctuates depending on the volume of the water stored within this zone. The confined system is under pressure due to the surface layer of clay on top and is resupplied where this layer is interrupted or terminates. See figures 1 and 2.

Stratified Drift Aquifers

The groundwater resources of Hampton Falls have been investigated by the NH Geological Survey and the US Geological Survey (USGS). The various investigatory efforts are described below.

The NH Geological Survey has prepared surficial geology maps for the Exeter, NH and Hampton, NH quadrangles. These maps identified stratified drift formations as "glacial stratified sand and gravel". This mapping effort provides a very accurate delineation of the Town's stratified drift aquifers. The only area identified as a stratified drift aquifer was a small finger extending from a larger area in Kensington, north of Winkley Brook. However, because surficial geology is based on the earth material at depths ranging from five to ten feet, it is entirely possible for an aquifer formation to have a greater lateral extent at greater depths than depicted by this mapping effort.

In 1977, the USGS prepared a study entitled, Availability of Groundwater in the Piscataqua and Other Coastal River Basins, Southeastern New Hampshire, John E. Cotton, Water-Resource Investigations 77-70. This study based its findings on the area's surficial geology and assumed that those areas containing stratified drift formations would yield significant amounts of groundwater. The 1977 USGS study identified three medium yield aquifers. The map prepared for this study provides the following narrative regarding medium yield aquifers found in the seacoast region:

Potential Medium Yield Aquifers - Areas inferred to be underlain by relatively thin saturated sections of medium to very coarse sand or sand and gravel that have medium potential to yield water. Shallow wells and infiltration galleries located by systematic groundwater exploration within these areas may yield sufficient quantities of water for small municipal and rural water districts and commercial and light industrial use. Deposits are thinner and wells would be less productive along the margins of these areas, except where they border areas of high potential. Pumping wells adjacent to streams or lakes may induce surface water to infiltrate the aquifer.

One of the medium yield aquifers is located along the Exeter Town line, the second is in the southwestern corner of town, and the third is a small area just north of Dodge Pond.

The USGS has recently completed the most thorough and accurate study of the region's groundwater resources to date. At this time, the USGS has not yet published the report, entitled Groundwater Resources of the Lower Merrimack and Coastal River Basins of Southeastern New Hampshire. The USGS is now in the process of having the report printed, but a draft is available for review at the USGS branch office in Bow, NH. The report identified three stratified drift aquifers within Hampton Falls. A brief

FIGURES 1 and 2

GROUNDWATER

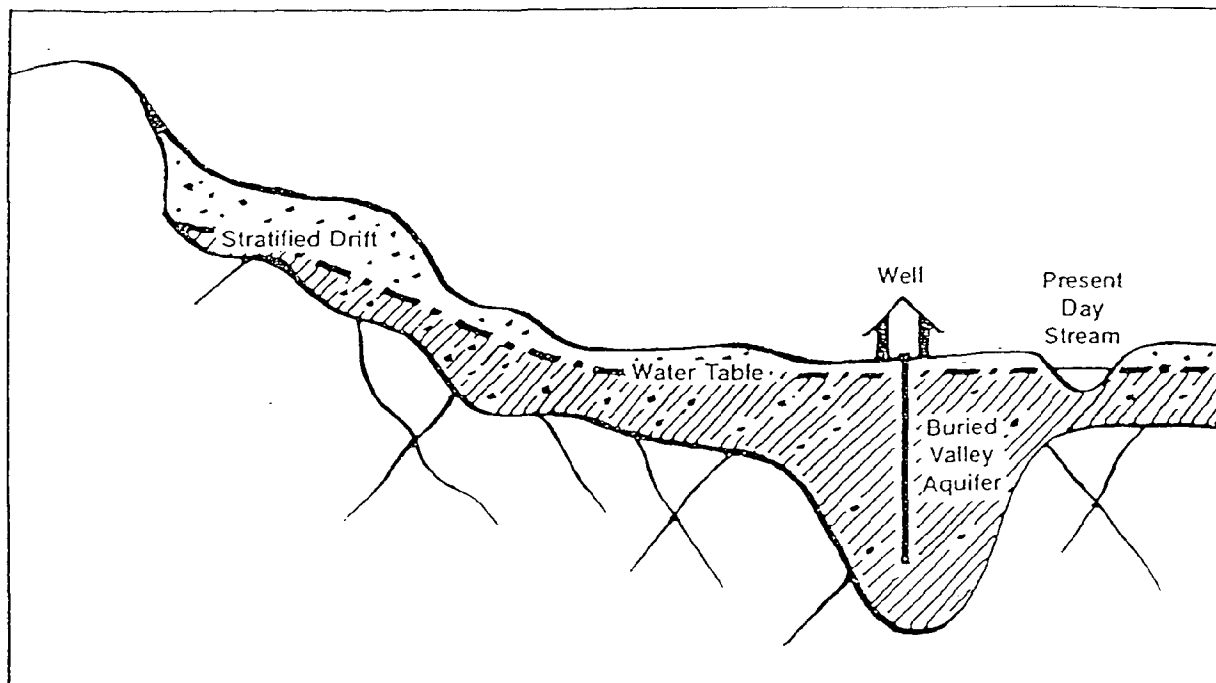
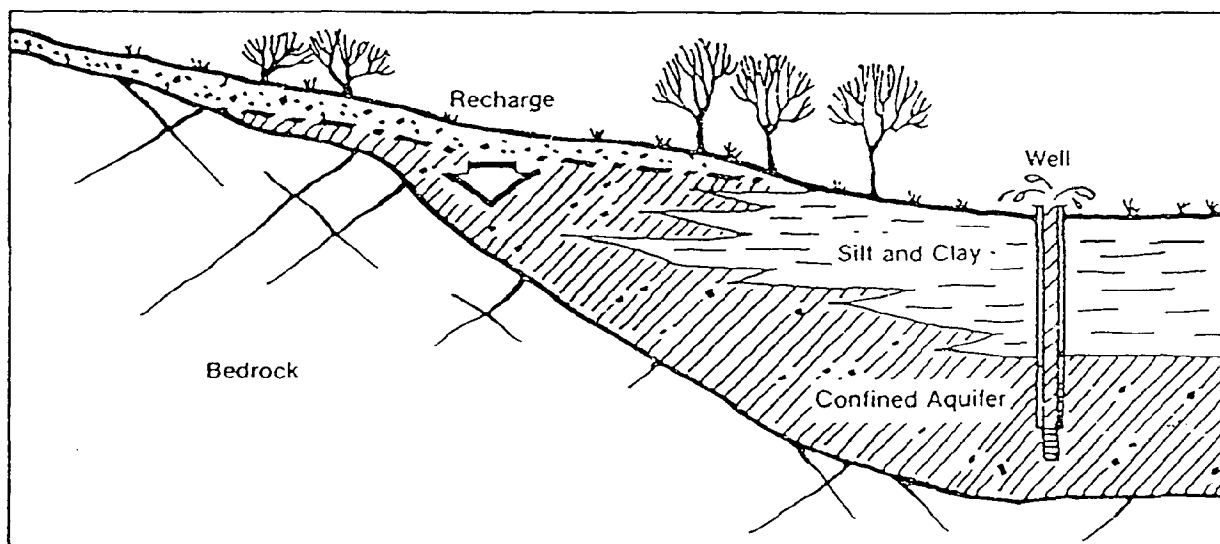


FIGURE 1 UNCONFINED AQUIFER



Confined aquifers are located between layers of material that have very low permeability. Groundwater in these aquifers is under pressure.

FIGURE 2 CONFINED AQUIFER

description of the identified aquifers is presented below, and their general locations can be seen on Map F - "Aquifers and Wells".

1. **Great Hill Aquifer:** This stratified drift aquifer was identified by the USGS study as being located around the base of Great Hill. This U-shaped aquifer is located entirely within Hampton Falls and is 110 acres in size. The saturated thickness, which is defined as the thickness of an aquifer below the water table, was determined to be 52 feet. The transmissivity rate of the aquifer was estimated at 0-1000 cubic feet per day per foot. Transmissivity is the rate at which water is transmitted through the aquifer. No water quality problems were detected by USGS.
2. **Newfound Hill Aquifer:** This aquifer was located by the USGS in the southwestern corner of Hampton Falls, near Newfound Hill. The aquifer lies mostly in Town, but a small portion extends into Seabrook. The entire aquifer is only 44 acres, with 34 acres in Hampton Falls. The saturated thickness of the aquifer is 26 feet according to the USGS study. The transmissivity rate of the aquifer was estimated at 0-1000 cubic feet per day per foot. Again, no water quality problems were detected by USGS.
3. **Crank Road Aquifer:** The third stratified drift aquifer is located just west of Crank Road in the central portion of Town. This aquifer is entirely within the Town boundaries and is 60 acres in size. Due to the aquifer's small size, the saturated thickness of the deposit was not determined. As with the other two aquifers, the transmissivity rate of the aquifer was estimated at 0-1000 feet² per day and no water quality problems were detected by USGS.

Due to the relatively small size of the aquifers, the USGS study did not determine the groundwater flow direction or water table contours for any of the aquifers in Hampton Falls.

A detailed discussion of existing potential threats located above these aquifers is presented in the Potential Threats section of this document. A discussion of potentially hazardous land uses allowed by zoning above these aquifers is presented in the Management of Potential Threats section of this plan. A strategy for mitigating the existing potential threats and possible hazardous land uses above these aquifers is also presented in the Management of Potential Threats section.

Withdrawal and Discharge Information

Information regarding withdrawal and discharge rates from water wells is to be filed with the Water Resources Division (WRD) of the NH Department of Environmental Services in accordance with the provisions of the NH Code of Administrative Rules Wr 700. Major groundwater users are defined by the State as those operations which use more than 20,000 gallons of water per day.

According to the latest records of the WRD, there are no major groundwater users registered with the State which are located within the stratified drift aquifer areas.

Well Log Data

The sources used for this section include the "Summary of Well Completion Report Data for the Town of Hampton Falls" dated 12/20/91, and the well site field verification maps prepared by the Water Resources Division. The WRD started keeping records on new water well construction in January, 1984, and an inventory has been maintained ever since. According to the Town's "Well Completion Report Data", a total of 114 newly drilled wells were reported between January 1984 and December 1991. The names and addresses of well owners are listed in Appendix B, and the general location of 66 of the wells are identified on Map F - "Aquifers and Wells". Not all wells are located on the map because the WRD has not been able to field verify all newly drilled wells. Each of the wells that the WRD has been able to field verify has a number next to the well location on Map F. The number is the same as that shown in the first column on the computer printout in Appendix B.

Map F - Aquifers and Wells

Looking over the Aquifers and Wells Map, it appears that only five of these wells are located above the Town's stratified drift aquifers as identified by the latest unpublished USGS study; two above the Great Hill Aquifer, and three above the Crank Road Aquifer. It can not be estimated how many of the 48 wells not mapped by the WRD fall within the Town's stratified drift aquifers until the WRD complete their field verification work.

All of the wells are drilled in bedrock and have depths ranging from 80 to 725 feet. The discharges of the wells range from 1 to 100 gallons per minute. For the five wells in the stratified drift aquifers, the depths range from 120 to 250 feet and the discharges range from 8 to 25 gallons per minute.

Map F shows 11 other well locations, all of which are classified as public water systems by the Water Supply And Engineering Bureau of the DES Water Supply and Pollution Control Division. These water systems are labelled A through K and are listed by name in Appendix C, "Public Water System Inventory". Most of these water systems are located along Lafayette Road and none are in the stratified drift aquifers.

Bedrock and Till Aquifers

The State Geologist map (previously cited), which depicts Hampton Falls' surficial geology, contains information regarding the location and extent of till (and marine sediment) formations. In general, till material has poorly sorted grain sizes, which results in limited porosity, transmissivity and hydraulic conductivity. Given these qualities, till formations would not be suitable for municipal water supply wells. Hence, these areas have not been delineated in this plan.

The bedrock geology of Hampton Falls was determined using the "Interim Geologic Map of New Hampshire", U.S. Geological Survey/State Geologist (1986), prepared at a scale of one inch equals approximately four miles. As previously stated, Map F depicts the bedrock wells which were mapped by the Water Well Board. In addition, the fault lines of different formations are shown on Map E, "Flood Hazards and Bedrock Geology".

Hampton Falls has three general types of bedrock geology:

1. Kittery Formation (metamorphic)
 - a) OZk - well bedded and grade-bedded purple and green phyllite and tan calcareous siltstone;
2. Ordovician Plutons (igneous)
 - a) Oe9 - proxene and pyroxene-hornblende diorite and gabbro, with minor granodiorite and granite;
 - b) On 2-3A - gray medium-grained tonalite and granodiorite; Newburyport pluton
3. Eliot Formation (metamorphic)
 - a) OZe - gray to green phyllite, quartzite and quartz mica schist and well-bedded calc silicate;

None of the Town's bedrock types are associated with high radon levels, however, this should not lead one to believe that radon is not present within Hampton Falls. Radon contamination in water has recently become a concern throughout the nation. Radon is a colorless, odorless, cancer-causing gas that is produced as uranium (typically occurring in trace amount) decays. This gas escapes from water once it is brought up from the ground. For example, when a shower is used in a home with water containing radon, radioactive gas diffuses into the air. Hydro-geologists at the University of New Hampshire's Department of Earth Sciences report that water from deep, bedrock wells is more likely to carry radon than water from shallow wells or those located in gravel deposits.

Appendix B includes a list of well log data for Hampton Falls. Map F depicts the locations of the 61 wells that are located outside the stratified drift aquifers previously identified. Each of these 61 wells are drilled in bedrock at total depths ranging from 80 to 725 feet. Bedrock was encountered at depths ranging from 5 to 135 feet. Discharges from these wells ranged from 1 to 100 gallons per minute.

Withdrawal and Discharge Information for Groundwater Users Located Outside of the Stratified Drift Areas

According to the latest records of the WRD there is only one major groundwater withdrawal registered with the State which is outside of the stratified drift areas. N.H. Yankee, Inc., which operates the Seabrook nuclear power plant, has four bedrock wells known as Brimmers Lane well field. According to WRD personnel, these wells are registered to permit a withdrawal of 432,000 gallons per day, but they have not been used since at least December of 1987.

In addition to the Brimmers Lane well field, there are 11 public water supplies within the Town's bedrock and till aquifer areas (see Map F and Appendix C).

Potential Groundwater Supplies

Hampton Falls does not have a municipal water system and has no plans to utilize its groundwater resources for such a purpose within the planning period (approximately ten years). With the exception of 35 homes along the Seabrook town line that are served by the Seabrook municipal water system, all of the Town's existing development is served by on-site water systems.

Although not much is known about the water delivery capability of Hampton Falls' three aquifers, they could potentially serve the needs of a small municipal water system covering a portion of the Town. The small size of the aquifers limits the potential of their use for a town-wide water system.

The following is an assessment of the potential for development above the surface areas of the Town's aquifers. This assessment will be based on the existing land uses above the aquifers, the existing zoning of their surface areas, and the existing and future land use sections of the Town's most recent Master Plan. The latest Master Plan for Hampton Falls was prepared in 1985, but an update is currently in progress.

As of this date, there is no water quality data available for Hampton Falls' aquifers. With no community or public water systems located within the aquifers, the normal sources for water quality information are not available.

Information regarding land use above Hampton Falls' portion of this aquifer comes from the existing land use map prepared as part of the ongoing 1992 Master Plan update. Currently, there are only a few single family homes located above Hampton Falls' aquifers, with the majority of the surface area being open and undeveloped. A large portion of the land above the Crank Road Aquifer has been disturbed by a gravel excavation. As stated above, there are no public water supplies located above Hampton Falls' aquifers.

In terms of the Town's existing zoning scheme, the aquifers fall within the Agricultural - Residence zoning district. This district, which includes the majority of town, is primarily low density residential and agricultural, with a few businesses scattered about. The minimum lot size is two acres. The potential for development of any land use other than low-density single-family homes is unlikely for these areas of town due to the distance from the center of town and the lack of a municipal sewer system.

In the event that Hampton Falls would wish to utilize any of its aquifers as potential water supply sources, a detailed water study would be needed. Items to address in this study should include:

- the aquifer's potential water delivery capability;

- the aquifer's existing water quality;
- the cost of water treatment;
- the potential threats posed by existing land uses;
- the potential threats posed by the existing zoning scheme;
- how to regulate land uses above the aquifer;
- the direction of groundwater flow within the aquifer; and
- options for water storage and water distribution.

Although the aquifers could possibly be utilized as public water supply sources, perhaps the most feasible option for the Town would be to tie into a neighboring water system. Since several water systems already exist, it may make more sense to extend water lines into Hampton Falls rather than spending a substantial amount of Town funds to establish a municipal water system. This alternative would be contingent on a positive response from one of the neighboring communities.

III. IDENTIFICATION OF POTENTIAL THREATS TO WATER RESOURCES

Regarding the source information (both data and maps) used to describe and map the potential threats to water resources in Hampton Falls, the municipality considers such information to be, at a minimum, as detailed and as accurate as the maps or information replaced. The municipality considers the source information to be the best available information existing at this time.

The sources used for this section are given below. It should be noted that these sources were verified and updated by Rockingham Planning Commission personnel in December 1992 with the assistance of local municipal officials. The primary sources used for this section include:

Inventory of Groundwater and Surface Water Potential Nonpoint Pollution Sources, compiled by the Strafford-Rockingham Regional Council in February 1982. This will be referred to as the RPC Nonpoint Inventory.

Waste Site Inventory, maintained by the Waste Management Division of the New Hampshire Department of Environmental Services, dated September 1987. This will be referred to as the WMD Waste Site Inventory.

The State of New Hampshire has delineated two general types of pollution sources: nonpoint and point. The NH Office of State Planning defines nonpoint pollution sources as those sources which are diffuse in nature and discharge pollutants over an area into the environment. Typically, nonpoint sources of pollution include urban and rural runoff, leachates from land disposal of solid and liquid wastes, agricultural runoff, sediment due to timber harvesting activities and road salt applications. Nonpoint sources can be difficult to pinpoint since some are of a short-lived nature, induced by storm events or activities occurring over a brief period of time. Some nonpoint sources, such as leachate from landfills and failed septic systems, are more easily located.

Point pollution sources, on the other hand, are defined as any discernible, confined or discrete conveyance from which pollutants are or may be discharged, including but not limited to: pipes, ditches, channels, tunnels, conduits, wells, containers, rolling stock, concentrated animal feeding operations or vessels.

Potential Nonpoint Pollution Sources

The potential nonpoint sources in Hampton Falls are identified on the accompanying Potential Pollutant Sources Map (Map G). A nonpoint pollution source has the mobility to travel over or under the land and pollute water resources along the way. In short,

Map G Potential Pollutant Sources

nonpoint pollution sources include situations where the pollution sources are not readily confined to, or identifiable as, a specific, discernible location. In Hampton Falls, examples of existing nonpoint pollution sources include:

1. A Town-owned indoor salt pile located at the corner of Drinkwater Road and Parsonage Road at the Town Public Works Garage and brush dump site. This facility stores approximately 14 tons of road salt per year. Pure salt is stored inside while a sand/salt mixture is stored outside. Currently, there are no monitoring wells in place. Source: RPC Nonpoint Inventory.
2. The brush dump mentioned above is also the site of the Town's abandoned dump. The use of this area as a solid waste landfill was discontinued in 1980, and since this time it has been utilized as a brush dump. The Town does have a state permit to burn brush at the site. Since Hampton Falls had very little commercial or industrial uses prior to 1980, the landfill was used for primarily residential waste. There are no monitoring wells in place at this site and no water quality data is available. There are no solid waste facilities in Hampton Falls that are permitted under the requirements of RSA 149-M. Sources: RPC Nonpoint Inventory and WMD Waste Site Inventory.
3. Salted Roads: All paved roads receive some type of road salt application. There are no monitoring wells along these roads, and no water quality data is available. It should be noted here that the Town uses a salt-sand mixture for its roads, while the State uses pure road salt for the maintenance of Routes 95, 84, 88, 107 and 1. Sources: RPC Nonpoint Inventory and Town Highway Agent.
4. Highway Salt Contamination Sites: There are five well sites in Hampton Falls which have been contaminated by highway salt. All of these sites were located near Routes 1, 84 and 88 and were shallow dug wells. The N.H. Department of Transportation has drilled new wells for these sites to replace the salt contaminated wells. Two of these replacement wells have been installed as recently as 1989. Source: N.H. Department of Transportation.
5. Excavation Operations: There are no large excavation operations within Hampton Falls. There is one inactive gravel pit located west of Crank Road and south of Drinkwater Road. There are no monitoring wells at the site and no water quality data is available. Sources: USGS topographic maps and Town Highway Agent.
6. Pesticide Application Sites: According to the records of N.H. Division of Pesticide Control, there are four sites in Hampton Falls where pesticides are applied. The sites are a Christmas tree farm north of Sanborn Road, a beekeeper east of Goodwin Road, and a tomato-grower at the corner of Towle Farm Road and Brown Road. For a detailed description of the types of pesticides used at each site, please review Appendix D.

Hampton Falls participates in the Seacoast Area Mosquito Control (SAMC) program. After flooding events, SAMC crews spray a biological pesticide ("BTI") on salt marshes and, to a lesser extent, freshwater wetlands. The pesticide contains bacteria that attacks mosquito larvae. Biological control of larval mosquitoes has less potential for adverse health impacts than spraying adult mosquitoes with a more toxic synthetic insecticide. Although cited in the Nonpoint Inventory, the pesticide application program has relatively minor environmental impacts.

7. The 1982 RPC Nonpoint Inventory identified a large pesticide application site at the Applecrest Farm Orchards along Route 88. Although the operation is still very active, the site is not included in list of permitted pesticide sites provided by the N.H. Division of Pesticide Control. It is however regulated under Title III of SARA (Superfund Amendment Reauthorization Act). Under the SARA regulations a company is required to register with the N.H. Office of Emergency Management so that emergency response personnel will know what hazardous materials are stored on site in the event of an accident. For more details on the hazardous materials used at Applecrest, please refer to the next section on Potential Point Pollution Sources. There are no monitoring wells at this site and no water quality data is available. Source: RPC Nonpoint Inventory and N.H. Office of Emergency Management file review.

8. **Manure Storage:** There are two horse stables in Hampton Falls. The Brimstone Stables are on Brimmer Lane and Gaylee Stables are located on Glenwood Road. These are not large operations, however, the improper storage of manure could result in water quality degradation. There are no monitoring wells at these sites, and no water quality data is available. Source: UNH Cooperative Extension Service.
9. **New Projects:** There are no large building projects currently under construction and the Planning Board has no major proposals underway which would have the potential to impact water sources. Source: Records of the Hampton Falls Planning Board.
10. **Underground Storage Tanks:** Underground storage tanks are a potential threat to water resources in that leaking can occur due to defects in tank construction, improper installation, and corrosion of older tanks. The State requires that all tanks with a capacity of 1,100 gallons or more be registered and the use reported to the Waste Management Division of the NH Department of Environmental Services, per NH Code of Administrative Rules WS 411.

Within Hampton Falls, there are nine active underground storage tanks having capacities of close to 1,100 gallons or greater, at four locations scattered throughout Town. The capacity of these tanks range from 1,000 gallons to 12,000 gallons, while the ages range from 4 years to 23 years. Six of the nine underground tanks are located at the Hampton Falls Getty on Route 1, which is owned by Rowell & Watson Co., Inc. Although municipal officials believe there are some abandoned underground storage tanks within the community, a comprehensive inventory has not been compiled at this time.

The general locations of all known active underground storage tanks are shown on the Potential Pollutant Sources Map (Map G). Details relative to tank location (by street address), owner's name, active or abandoned status, capacity, type of construction, dates placed in and/or out of service (as applicable), type of product stored, and description of the leak detection system (if any) is presented in Appendix E.

Underground storage tank information was provided by the Waste Management Division of the NH Department of Environmental Services in a print-out dated October 12, 1992. Additional detailed information on each tank was also obtained from a DES print-out dated December 5, 1989. A recent review of all development proposals currently before the Planning Board indicate there are no proposed developments planning to use underground storage tanks at this point in time.

Potential Point Pollution Sources

Hampton Falls is relatively free of point pollution sources, i.e., those sources confined to a specific, discernible location. There are no CERCLA (Superfund) sites in Hampton Falls, nor are there any National Pollution Discharge Elimination System (NPDES) permit holders, or any facilities requiring a Groundwater Discharge Permit. However, there are several facilities regulated under the National Resource Conservation and Recovery Act (RCRA), two facilities regulated under Title III of SARA (Superfund Amendment Reauthorization Act), and several potential contamination sites identified by the DES Groundwater Protection Bureau. These sites are further described below.

Facilities Regulated Under RCRA and SARA

Although the RCRA and SARA program both deal with hazardous waste generation, there are some important differences. The RCRA program deals with the storage and disposal of hazardous wastes, whereas the SARA program deals more with emergency response planning in the event of a hazardous waste accident. Such planning is coordinated between state and local fire response officials. Since RCRA and SARA both deal with hazardous wastes, it is not uncommon to find a facility regulated under both programs. The establishments in Hampton Falls which are regulated under RCRA and SARA are described in Tables 5 and 6 on the next page.

TABLE 5 - RCRA FACILITIES

Site Name	Site Address	Generator Type*
1. Auto Wise Repairs	2 Brown Lane	Provisional
2. Burditts Bargain Center	34 Lafayette Road	Provisional
3. Dempsey's Garage	19 Lafayette Road	Safety Kleen
4. Dicks Tire Service	49 Lafayette Road	Permanent
5. FDIC Receiver for Nashua Trust (Murphy Lumber)	10 Kensington Road	Provisional
6. Hampton Falls Auto Sales	98 Lafayette Road	Permanent
7. Town of Hampton Falls	1 Drinkwater Road	Provisional
8. Red Dragon Autobody	126 Lafayette Road	Permanent
9. Wheels Plus Auto Sales	98 Lafayette Road	Provisional
10. Wilsons Auto Repair	2 Brown Lane	Provisional
11. Wright's Auto Body	153 Lafayette Road	Permanent
12. The Yankee Printer	113 Lafayette Road	Permanent and Provisional

* Generator Type definitions:

Permanent - Assigned to facilities which routinely generate waste.

Provisional - One time or emergency clean-up. Occasionally it is interim until a permanent number is obtained.

Safety Kleen - Self contained parts cleaner that is delivered and picked up on a regular basis.

Source: DES Waste Management Division

TABLE 6 - SARA FACILITIES

Establishment Name	Hampton Falls Location	Type of Hazardous Materials	Volume Generated	Physical and Health Hazards Noted
Dodge's Agway	Lafayette Road	Dinoseb Penn Cap Chlorine Methomyl Powder Gramaxone 20% Endosulfen 50% Maneb Thiodan Dust Methomyl liquid Di-Syston 10 Carbofuran 15g Rozol Guthion Creosote	6 gallons 2 gallons 15000 lbs 50 lbs. 10 gallon 75 lbs. 100 lbs. 5 gallons 50 lbs. 300 lbs. 90 lbs. 50 lbs. 100 lbs.	Corrosive Fire, toxic Fire, toxic Fire, toxic Fire, toxic Anticoagulant, flammable Toxic Reactive, irritant, toxic
Applecrest Farm Orchards	Route 88	Solid pesticide Liquid pesticide	1000 lbs. 25 gallon	Irritants, toxic, fire hazards

Source: DES Waste Management File Review.

Records of the Groundwater Protection Bureau

The Groundwater Protection Bureau of DES maintains an inventory of sites which have been investigated for groundwater contamination and potentially hazardous land uses which are regulated under other federal or state programs.

The main groundwater hazard identified by the DES is the Gruhn Property on Route 107 in the southeastern corner of Town near the Seabrook Town line (see Map G). This hazardous waste site was discovered in 1988 when volatile organic compounds were detected in the Town of Seabrook's bedrock well #1 during normal water quality testing. The suspected origin of the contamination is a small aircraft engine repair shop operated out of the Gruhn property from the early 1950's until 1973. After the property owner's death, the degreasers stored in the shop were emptied into a sink which emptied into the ground in the backyard. Testing done by DES in 1989 revealed that the water from well #1 in the Seabrook wellfield contained Trichloroethylene (TCE) and Perchloroethylene (PCE) above the maximum contamination levels. Seabrook was allowed to continue to use the well only after agreeing to mix the water from well #1 with the water from the other three bedrock wells. Three monitoring wells were installed at the site in May of 1991. The Gruhn Property is located directly above the Newfound Hill aquifer, one of only three aquifers in Hampton Falls.

The Town of Seabrook has drilled a fifth bedrock well in the wellfield and is seeking permission from DES to begin operating the well. Seabrook has hired a consulting firm to evaluate the site to ascertain if water can be safely pumped from the site. The DES will not permit the well to operate until ongoing remedial activities are undertaken on the Gruhn Property or it is shown that there is no hydrologic connection between the proposed well and the pollution source.

The only other sites listed in the DES files were a floor drain at the Blue Lobster Restaurant which is registered with DES, and an isolated water sample taken at the Sturgis Village Barn. Both sites are located on Route 1 and are not considered to be significant threats.

Potential Threats - Existing and Future Land Use

This section will address sections 501.01 (c), and 501.04 (a) of the Rules for Local Water Resource Management and Protection Plans (NH Administrative Rules, adopted August 20, 1990).

Existing Land Use

Information regarding existing land use was obtained from the Existing Land Use chapter and Existing Land Use map of the Master Plan, which was prepared in 1992 and has recently been adopted. A copy of the text and map is not included in this chapter, but is included elsewhere in the Master Plan.

Residential Development - Hampton Falls does not really have a significant population center. As the Existing Land Use map shows, the residential pattern is quite dispersed. According to 1991 figures from the NH Office of State Planning, single family homes account for approximately 92% of the Town's housing stock. The latest count is 557 single family homes, 44 multi-family dwellings, and 6 mobile homes (manufactured housing).

Commercial and Industrial Development - Hampton Falls does not have a substantial commercial base, however, the Town has set aside the Route 1 area of the community for such use. There are a few small-scale commercial businesses within the Business zoning district, such as restaurants, antique shops, automobile dealers, small retail stores and other local service oriented establishments. There is no industrial development in Hampton Falls. There are a number of operating farms and orchards in Town. The Town's existing land use pattern does not unduly threaten its water resources to any great degree. However, as the ensuing discussion on the Town's zoning scheme will point out, the potential for creating new pollution sources is present.

Existing Zoning Arrangement

Currently, there are two zoning districts in Hampton Falls: Agricultural-Residential and Business. Below is a description of the Town's zoning districts, including a discussion of the permitted uses which could potentially threaten the community's water resources.

Agricultural-Residential (A District): This district is limited to low density residential uses, public buildings, churches, agricultural operations, stables, golf courses, nursing homes, hospitals and home occupations. The minimum lot size is two acres and the minimum road frontage requirement is 250 feet. The potentially hazardous land uses allowed in this district are agricultural operations which engage in excessive pesticide use or manure spreading, outdoor manure storage, and poor soil management resulting in erosion; home occupations which utilize chemicals (such as beauty shops, art studios, and antique shops which engage in furniture stripping); stables or riding academies which store manure outside; golf courses which use excessive amounts of pesticides; nursing homes and hospitals which produce medical wastes; and improperly operating residential septic systems. It should be noted that this district covers the majority of the Town and the land above the Town's identified aquifers, as well as its more significant wetland areas.

Business (B District): This commercial district is located along both sides of Route 1 and is the only business district in Town. The permitted uses include any use allowed in the A District plus a wide variety of retail, office, service and wholesale businesses. Industrial uses are allowed only by special exception. The minimum lot size is two acres for all uses. The minimum road frontage requirement is 250 feet.

Potentially hazardous land uses permitted in this district include: those uses listed above in the A District; laundry and dry cleaning facilities; storage establishments (those operations engaged in storing and transporting hazardous materials); service stations and automotive repair shops; funeral homes; industrial uses (those operations using or producing chemicals and/or wastewater); and retail and personal service establishments (print shops, antique shops, or other retail or service operations which use hazardous chemicals and/or produce wastewater).

Future Land Use

The 1985 Master Plan does not contain a chapter that discusses future land use. The Planning Board is expecting to have a Future Land Use chapter prepared as part of the ongoing Master Plan update. Since no future land use section is now available, it is assumed that future land uses will follow the permitted uses allowed by zoning. The potentially hazardous land uses for each zoning district are described above. For a description of the recommendations which could potentially affect the Town's water resources, please review the discussion regarding potential groundwater supplies in the Description of Groundwater Resources section.

As of December 1992, the Hampton Falls Planning Board has not approved any residential or nonresidential development that could be considered a future potential pollutant source. Two reasons for this is that the pace of development, of any kind, has significantly declined during the 1990's and the amount of vacant land along Route 1 is not that great.

Master Plan Considerations

There are several sections of the Master Plan which have the potential to impact on the Town's water resources. A summary of these sections is presented below.

1985 Master Plan: Community Goals

1. Goal - "Protect from degradation important natural areas and coastal zone areas of particular concern." (p. 2)
2. Goal - "Encourage the location of businesses within the commercial district which will not significantly degrade the quality of the air, water, or surrounding land." (p. 2)

1985 Master Plan: Coastal Zone Areas of Particular Concern

1. "The Town recognizes floodplains as areas requiring management. Accordingly, the Town established the Floodplains Overlay District incorporating those lands within the one hundred year floodplain boundary..." (p. 39)
2. "Where tidal wetlands coincide with and are overlapped by floodplains, management mechanisms for tidal wetlands should apply and be complemented and reinforced by floodplain ordinances. The Town recognizes the need to protect the wetlands." (p. 43)
3. "Hampton Falls has several upland areas which are of particular importance to the Town. These include the newly acquired Town Forest, aquifer recharge areas, large freshwater wetlands and potential dam sites." (p. 45)
4. "It is of great importance that the recharge areas which supply the wells do not become contaminated by hazardous waste, or reduced in size or recharge capability....It is recommended that the Town obtain as much information as possible about its recharge areas and groundwater characteristics. From these data, regulations should be drawn up which will protect the aquifer recharge areas from incompatible development or construction." (p. 45)
5. "It is important that Hampton Falls restrict or control development of upland wetland areas and protect these from contamination or degradation." (p. 46)

1985 Master Plan: Summary of Recommended Actions

1. Town should consider "soil type/lot size overlay to our zoning maps to limit development in those areas of poor drainage and those areas of excessive drainage where pollution is the highest." (p. 55)
2. Town should consider "excluding development from those areas identified as potentially hazardous to human health, safety and welfare. Those areas include: floodplains, steep slopes, wetlands, riparian lands." (p. 55)
3. Town should consider "regulating development in areas where man's intrusion may result in significant adverse environmental impact. These areas include: aquifer recharge areas, seasonal wet soils, slopes of 15% - 25% and areas adjacent to water bodies. Enact regulations to restrict structures within a defined distance from a body of water or recharge area and seasonal wet soils." (p. 55)
4. Town should consider "flexibility of zoning to encourage development to take place on land least likely to have a detrimental impact on water supplies either as a source or a potential pollution." (p. 55)
5. Town should consider "development of an on-going program of monitoring the environmental impact of development on our water supplies to ensure that growth can be supported by on-site wells." (p. 56)
6. "The Town should consider the adoption of a comprehensive ordinance for the protection of Hampton Falls' wetlands." (p. 59)

Pollution Potential - Inside and Outside Hampton Falls

Within Hampton Falls, there are no areas where there is a concentration of septic systems or dense development. The only areas where water quality could be threatened by existing or potential development are the commercial areas along Route 1 and agricultural operations throughout Town. Other areas within Hampton Falls to monitor include the land above the Town's three aquifers. The location of the Gruhn property hazardous waste site makes the potential use of the Newfound Hill aquifer unlikely.

Regarding areas outside of Town, Hampton Falls should monitor the development activity taking place in the communities along its borders and participate in any watershed-wide protection efforts. All of the rivers in Hampton Falls flow into the Town from other communities. Hampton Falls should monitor the development activity along these rivers in its neighboring communities. Getting to know, and keeping in touch with, Planning Boards from abutting communities is a good way of keeping track of development activity in the region. An agenda sharing arrangement could be developed to keep all parties informed.

According to the records of the DES, the only known water hazards located near the Hampton Falls town line are the following:

1. A leaking underground storage tank at the Dirigio demolition site off Route 150 in Kensington. This site is approximately 2,000 feet from the southeastern corner of Hampton Falls.
2. A leaking underground storage tank at the Bryer residence at 624 Exeter Road in Hampton. This site is north of the Taylor River, approximately 1,500 feet from the northern portion of Hampton Falls.
3. An oil spill at the Fogg Auto Salvage site on Stard Road in Seabrook. This site is approximately 1,300 feet south of the Hampton Falls line.
4. A leaking underground storage tank at X-tra Mart at 779 Lafayette Road in Seabrook. Located approximately 2,000 feet south of Hampton Falls, this site has been assigned to the Oil Discharge and Disposal Cleanup Fund (ODD Fund).
5. A leaking underground storage tank at Tri-Rent-All at 143 Lafayette Road in Hampton. This site is approximately 2,000 feet north of Hampton Falls.
6. A hazardous waste site at Johnson Matthey at 892 Lafayette Road in Seabrook. The site is approximately 500 feet south of Hampton Falls and is being overseen by the Waste Management Division of DES.
7. An old open dump site off Lafayette Road in Hampton that is less than 30,000 square feet in size. This abandoned site is approximately 3,500 feet north of Hampton Falls.
8. An old open dump site off Island Path Road in Hampton that is less than 8,000 square feet in size. This abandoned site is approximately 2,200 feet north of the eastern portion of Hampton Falls.
9. A solid waste transfer station and landfill off Rocks Road in Seabrook that is approximately 4.5 acres in size. This site is approximately 3,200 feet south of Hampton Falls.

None of these sites have any known contamination beyond the immediate location of the pollution source. Most of the locations are isolated pollution sites where remedial action to remedy the situation has been or will be taken. The threat to Hampton Falls water resources from these sites is unknown, but is considered to be minimal.

IV. ASSESSMENT OF GROWTH IN DEMAND FOR WATER

This section will provide an estimate of the existing and future demand for water in Hampton Falls. Since most of the Town is not served by a municipal water system, existing water demand is met by individual wells. None of the public water systems in Hampton Falls serve residential uses and all are relatively small systems.

Existing Water Demand

The 1990 U.S. Census indicates that 554 of the 591 households in Hampton Falls obtain their water from individual wells. There are 35 households near the Seabrook border that receive their water from the Seabrook Water Department. Two households obtain

their water from "some other source" according to the U.S. Census. The number of persons per housing unit in Hampton Falls in 1990 was 2.54, which was calculated by dividing the population in 1990 (1,503) by the number of housing units (591). The number of households was multiplied by 2.54 to determine how many people obtain water from the various sources. To determine the daily water demand per household, the standard of 65 gallons per person per day was used. This standard was obtained from a 1990 study titled, Water Supply Study for Southern New Hampshire, prepared by Roy F. Weston, Inc. for the Water Supply Task Force. The existing water demand figures are presented below in Table 7.

TABLE 7 - HAMPTON FALLS EXISTING WATER DEMAND

Source of Water Supply	Population Served	Type of Public Water System	Water Demand (gallons per day)
On-site wells	1,408	Not applicable	91,520 gpd#
Seabrook Water Department	90	Municipal	5,850 gpd#
"Other sources"	5	Not applicable	325 gpd#
Lincoln Akerman School	172 students and staff	Non-community, transient	6,020 gpd+
Hampton Falls Child Care Ctr.	41 children and staff	Non-community, transient	615 gpd+
Sunshine Kid's Preschool	45 children and staff	Non-community, transient	675 gpd+
Hampton Falls Shoppers Village	transient	Non-community, transient	3,700 gpd+
Hampton Falls Business Common	transient	Non-community, transient	2,600 gpd+
Mall at Granite Square	transient	Non-community, transient	3,200 gpd+
Wakeda Campground	400 sites	Non-community, transient	30,000 gpd+
Hampton Falls Motor Inn	47 rooms	Non-community, transient	9,400 gpd+
Savanelli's Deli	transient	Non-community, transient	less than 1,000 gpd+
Surf & Turf Deli	transient	Non-community, transient	less than 1,000 gpd+
Heritage House	transient	Non-community, transient	8,800 gpd+
Luka's Greenhouse	transient	Non-community, transient	23,160 gpd+
Total			179,065 GPD

Based on 65 gallons per capita per day.

+ Water demand estimate based on WSPCD design standards.

The previous table indicates a total water demand of 179,065 gallons per day for the Town of Hampton Falls. This estimate includes the Town's major residential, commercial, and institutional uses. There are no industrial uses and the agricultural uses do not use very much water.

Future Water Demand

This section will use the most recent population projections developed by the NH Office of State Planning. For the year 2000, Hampton Falls' population is projected at 2,407 residents. In an effort to reasonably project the Town's future water demands, certain assumptions were made:

- 1) The Seabrook Water Department currently serves approximately 6% of the Town's population. Because Seabrook only provides water to those Hampton Falls homes that abut streets where water lines are installed to serve Seabrook homes, it is not likely that the number of homes will significantly increase in the future. For the purpose of future water demand projections, it will be assumed that this system will continue to serve only 35 homes.
- 2) The existing non-community water systems are not likely to expand due to site limitations. Therefore, their existing water demands are expected to remain constant. The one exception is the Lincoln Akerman School, where the enrollment is expected to grow in proportion to the increase in population. Since the population is projected to increase by 60% by the year 2000, the same increase will be assumed for the school.
- 3) Although new non-community water systems may be established in the future, it is impossible to estimate how much of the Town's overall water demand they will be responsible for. Therefore, they cannot be factored into the equation.
- 4) Although Hampton Falls does not have a large commercial or industrial base, the Town would like to encourage more land uses of this nature. Due to the Town's existing zoning scheme, it is more than likely that such development will be located along Route 1. If the Town wants to attract this type of development, it may be wise to attempt to reach an agreement with Hampton or Seabrook to run water lines to a portion of Route 1. This may help to attract some commercial or industrial development.
- 5) Agriculture, as a land use, has been in decline throughout the region for quite some time now. Currently, Hampton Falls has only a few large farming operations, and the Town is unlikely to be the site of any future large-scale farming operations. Therefore, the water demands of the Town's agricultural sector will not be factored into the equation.

Table 8 below projects the Town's future water demands for the year 2000. Once again, the number of people to be served by on-site water wells was derived by taking the Town's projected population and subtracting that portion currently served by the Seabrook Water Department. The water demand estimate for the population served by on-site wells is based on the same standards as used for the existing water demand calculation.

TABLE 8 - HAMPTON FALLS PROJECTED WATER DEMAND

Water User	Projected Population Served	Water Demand Projection - Year 2000
On-site wells	2,312	150,280 gpd
Seabrook Water Department	90	5,850 gpd
"Other sources"	5	325 gpd
On-site non-community public water systems	transient	84,985 gpd
TOTAL	2,407	241,440 gpd

The above projections are general in nature, and are intended as a guideline in terms of considering the Town's future water demands. They are not intended as scientific

data for the purpose of evaluating the need for a municipal water supply or any other type of water planning effort.

V. DESCRIPTION OF THE INFRASTRUCTURE

Regarding the source information (both data and maps) used to describe and map the infrastructure of Hampton Falls, the municipality considers such information to be, at a minimum, as detailed and as accurate as the maps or information replaced. The municipality considers the source information to be the best available information existing at this time.

Septic System Usage

Septic disposal in Hampton Falls is handled entirely by on-site septic systems and holding tanks. The Town does not have a municipal sewer system, nor are there any plans for the establishment of such a system within the planning period (approximately ten years). The 1990 US Census figures indicate that there were 1,503 residents in Hampton Falls, all of which are dependent upon on-site septic systems. According to 1991 estimates from the NH Office of State Planning, there were 607 dwelling units utilizing on-site septic systems in Hampton Falls.

Monitoring on-site septic systems is handled by the Town's Health Officer. According to the Health Officer and the Building Inspector, the few instances of septic system failure have been scattered throughout the Town. Only three septic system failures have occurred in the last four years. These failures have been attributed to the old age of the systems and the lack of proper maintenance.

The more rural areas of Hampton Falls have a high percentage of soils which contain moderate to severe limitations for the placement of on-site septic systems. For a graphic depiction of these areas, as well as areas rated high in terms of septic system suitability, please review the accompanying Soil Suitability For Septic Systems Map (Map H). This map should not lead one to believe that areas of low suitability cannot be utilized for the placement of septic systems, rather, the map's purpose is to point out limitations which must be dealt with during the building phase. Many of the environmental constraints can be mitigated through corrective measures taken by the developer.

According to the soil rating matrix prepared by the Rockingham and Strafford County Conservation Districts (see Appendix A), Hampton Falls' land area is fairly evenly divided between soils with very low suitability for the placement of on-site septic systems, and soils with medium suitability. Soils with very low suitability were so designated because they had limitations due to steep slopes, high water tables, or depths to bedrock.

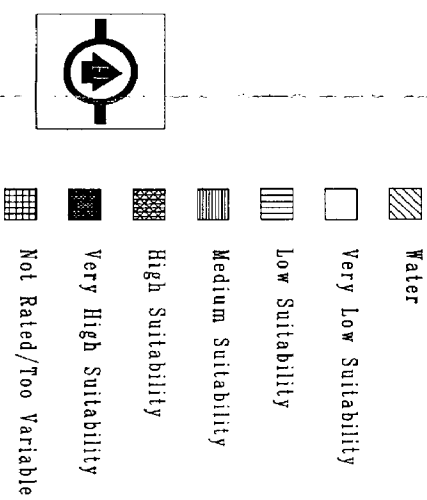
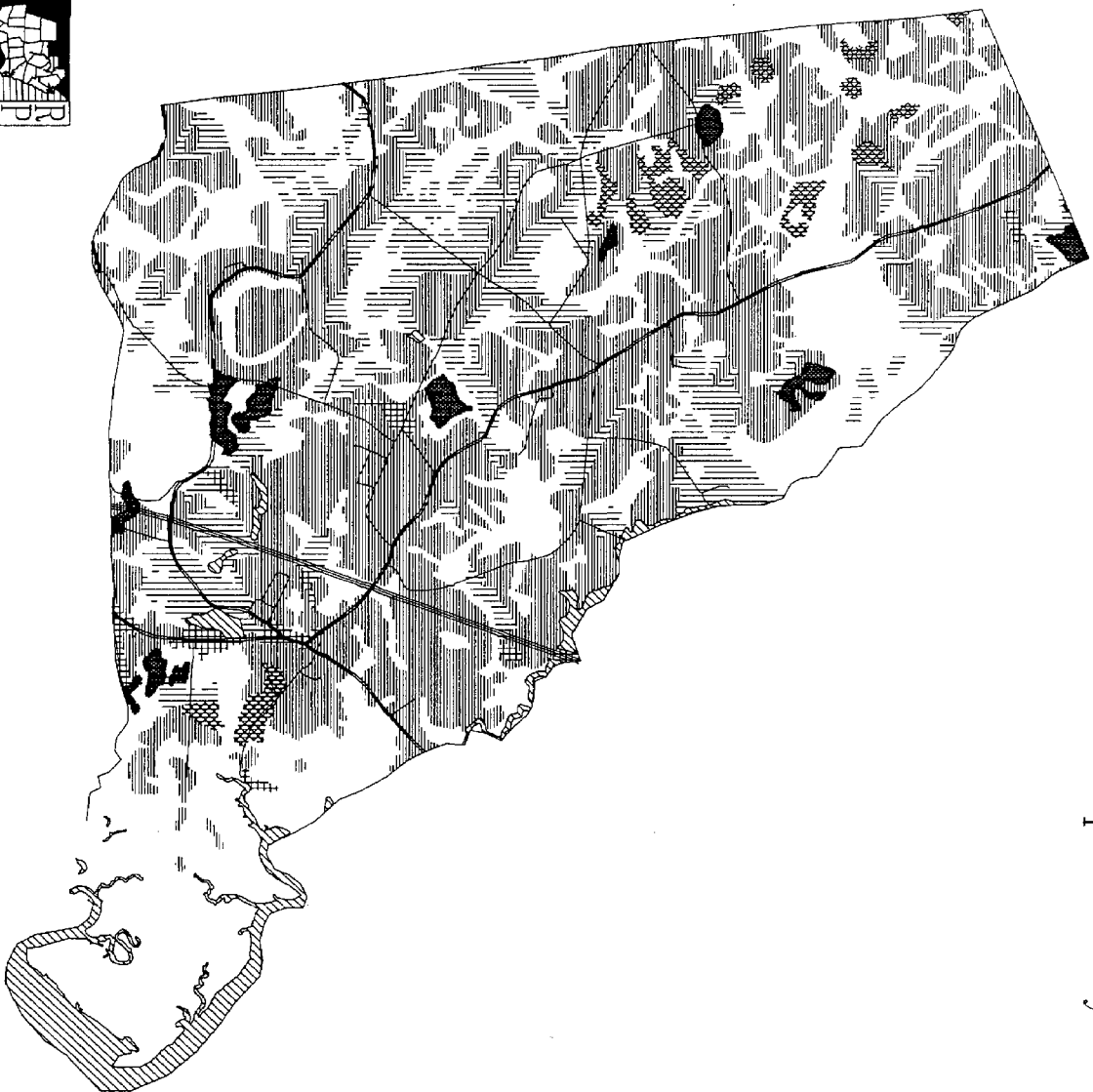
The soil properties of proposed development sites in Hampton Falls should be thoroughly evaluated during the subdivision and site plan review process before the installation of septic systems takes place. To this end, the Planning Board does review all subdivision and site plans with respect to potential soil/septic system problems.

Under state law (RSA 149-M:13), each community must have its own septage disposal facility, or a formal agreement with another municipality to utilize their facility. Currently, there are no permitted septage disposal sites located within the Town. Hampton Falls has an informal agreement with Hampton to allow for septage disposal at the Hampton wastewater treatment plant. Septage disposal is handled by an assortment of private haulers who bring the material to the facility.

Hampton Falls is a member of the Southeast Regional Solid Waste District, however, the district does not have a regional septage management plan in place at this time. It is recommended that Hampton Falls address the requirements of RSA 149-M:13, either on its own or within a regional framework.

Town of Hampton Falls -- Soil Suitability for Septic Systems

Map H - Soil Suitability For Septic Systems



Sources: "Soils Potential for Development-Rockingham County";
U.S.D.A. - Soil Conservation Service and Rockingham
County Conservation Dist.; May 1987.

Complex Systems Research Center, UNH, February
1990. Soils delineation based on field work,
conducted by the USDA Soil Conservation Service,
completed in 1985. Preliminary Data - Subject
to Change.

Prepared by the Rockingham Planning Commission,
October 1991. SRG



Solid Waste Disposal

According to the document entitled, Southeast Regional Solid Waste District - Solid Waste Management Plan, prepared by the Rockingham Planning Commission in February 1991, Hampton Falls produces approximately 1,610 tons of solid waste per year. This total includes both residential and non-residential waste estimates. The Town contracts with a private hauler for curbside pickup and delivery to the Kingston Landfill. The private hauler also collects the recycled material at the curbside. The Town's existing recycling program is mandatory. Materials collected in this program include: newsprint, glass, aluminum and steel cans, and plastics.

The only solid waste disposal facility in Hampton Falls which has a permit from the state is the brush dump. The Town holds semi-annual collections at the brush dump for tires and bulky wastes. According to the DES Waste Management Division, there are no existing permit violations at the brush dump site. There are no monitoring wells in place and no water quality data is available. The Town does not have any plans to upgrade or expand the brush dump site at this time.

Public Water Supplies

As mentioned previously, Hampton Falls residents receive their water entirely from groundwater sources; mostly through the use of on-site domestic water wells. The Seabrook Water Department does supply water to 35 homes along the Seabrook border. There are, however, eleven wells in Hampton Falls which are considered "public water systems" as defined by RSA 485:1. According to the RSA, there are three types of public water systems: community water systems, non-community water systems, and non-community, transient water systems. These systems are defined as follows:

Community Water System: A public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Community water systems are usually associated with residential developments.

Non-Community Water System: A public water system which serves the same 25 people, or more, over six months per year. Examples of this type of system include: schools, government buildings, and large industries.

Non-Community, Transient System: A public water system which serves a transient population of 25 people, or more, over six months per year. Examples of this type of system include: restaurants and large commercial uses.

The above public water systems are periodically tested by a state agency. The regulatory authority responsible for water quality testing is the Engineering Bureau of the Water Supply and Pollution Control Division within the NH Department of Environmental Services (DES). Starting in January 1992, the community and non-community water systems will receive an annual Safe Drinking Water Analysis (SDWA) which involves testing for the following items: iron, manganese and other metals, inorganics, volatile organic compounds, pH, and radon. Prior to January 1992, these systems received an SDWA every three years. The non-community, transient systems receive an SDWA every six years. Historically, community water systems are tested monthly for bacteria. Beginning in January 1992, the two types of non-community systems will be tested for bacteria every three months; however, it remains to be seen whether DES has the staff to comprehensively implement this new requirement.

According to the most recent records of the NH Department of Environmental Services, there are eleven public water systems located in Hampton Falls. These systems are listed in Appendix C and their general locations are shown on Map F as symbols A through K. The estimated water demand for each system is included in Table 7. As the map indicates, most of the water systems are located along Route 1. All of the water systems are non-community, transient systems as defined by the N.H. Water Supply Engineering Bureau. Each of the water systems obtain their water from wells and serve only their businesses. Water demand is not expected to increase significantly in the future.

Public Wastewater Treatment Facilities

Currently, Hampton Falls does not have a municipal wastewater treatment facility. The Town is entirely served by on-site septic systems, therefore, there has not been a need for a municipal wastewater treatment plant. The Town does not plan to install a municipal sewer system or a wastewater treatment facility within the planning period or the next ten years.

VI. DESCRIPTION OF EXISTING PROGRAMS AND POLICIES

The local ordinances and regulations of the Town of Hampton Falls were reviewed by Commission personnel for the purpose of identifying the elements of each which have the potential to impact water quality or quantity. The results of this review are summarized below.

Zoning Ordinance

In addition to the specific permitted uses described in the Description of Potential Threats chapter of this document, there are several other sections of the Hampton Falls Zoning Ordinance which relate to water resources. These sections include:

Floodplain Overlay District - Article III Section 7

1. Section 7.1: "No use of or alteration to such lands or additions to existing structures thereon is permitted....which will impair the Floodplain, increase the hazards of flood heights and/or velocities, impede the flow of water or reduce the pooling area of the Floodplain."
2. Section 7.1.1: "No such land may be filled, excavated or otherwise altered without a permit from the Planning Board."
3. Section 7.3: "No watercourse location shall be altered within this District."

Wetlands Conservation District - Article III Section 8

1. A. PURPOSE: "2. To preserve natural wetland areas which provide flood protection, nutrient absorption and augmentation of stream flows during dry periods."
2. A. PURPOSE: "3. To control the development of structures and land uses on naturally occurring wetlands which would contribute to surface and groundwater pollution and reduce surface or groundwater."
3. D. PROHIBITED USES: "1. Waste, Septage, or sludge disposal; 2. Storage of gasoline, fuel oil or other hazardous materials or roadsalt stockpiles; 3. Excavation as described in Article V of the Zoning Ordinance."

Floodplain Development Ordinance - Article III Section 9

1. This ordinance was adopted by the Town at the 1990 Town Meeting, and is based on a model floodplain ordinance developed by the Federal Emergency Management Agency.
2. All proposed development within any special flood hazard areas requires a permit from the Building Inspector.
3. Permit applicants are required to furnish the Building Inspector with information regarding replacement septic systems, flood proofing measures and engineering studies when the relocation of a watercourse is proposed.
4. Development within the Town's identified flood hazard areas must comply with special development standards, including elevation and floodproofing requirements.

Removal of Water - Article IV Section 8

1. "The removal of water from groundwater or surfacewater sources in the Town, for use outside of the Town, is prohibited, except for emergency or public safety purposes."

Underground Storage Tanks - Article IV Section 9

1. "No tank with a capacity of less than 1,100 gallons for the storage of motor fuels and/or heating oils shall be replaced or installed underground."

Building Code

Hampton Falls has a Building Inspector, who enforces the 1988 version of the BOCA Code. Other codes enforced by the Town include: the 1988 version of the National Fire Protection Association Life Safety Code; and the 1987 version of the BOCA Fire Prevention Code.

Subdivision Regulations

The Hampton Falls Subdivision Regulations contain specific provisions which pertain to the management and protection of water resources. These provisions include:

1. Section 4.6: "Land of such character where man's intrusion may result in significant adverse environmental impact shall not be used for residential occupancy nor for other uses which may cause significant adverse environmental impact until appropriate measures have been taken by the owner or his agent to lessen such impact. These areas include: Aquifer recharge areas, seasonal wet soils, slopes in excess of 15%, and areas adjacent to water bodies."
2. Section 4.8: "In areas not currently served by sewer systems, it shall be the responsibility of the subdivider or his agent to provide adequate information to prove that the area of each lot is adequate to permit the installation and operation of an individual sewage disposal system, (i.e., septic tank and drain field)."
3. Section 4.9: This section covers the requirements in regards to surface water disposal and soil erosion. Details on how to compute the runoff calculations are included.
4. Section 4.10: This section regulates the dredging, excavating and filling of land and incorporates the provisions of the RSA 149:8-a, which has since been recodified as RSA 485-A:17. This RSA requires a permit when significantly altering more than 100,000 square feet of terrain.
5. Section 4.13: This section requires the provision of an adequate surface storm water drainage system for an entire subdivision. Design standards for the drainage facilities and soil erosion measures are included.
6. Section 5.6: "No roads and other access ways, pipelines, powerlines and other transmission lines shall be constructed through very poorly drained soils...". Construction of these access ways through poorly drained soils is allowed only under certain conditions.

Site Plan Review Regulations

Hampton Falls requires site plan review for all non-residential development proposals. Site plan regulations relating to the protection and management of water resources are summarized below.

1. Section 1.4225: Requires the site plan to be evaluated to determine that the grading and filling of the site will be minimized so that the surface and

subsurface drainage onto abutting properties will not be altered.

2. Section 1.53: "In no case shall a dwelling, septic system, or other structure be sited on poorly drained or very poorly drained soils or within 100' of such soils."
3. Section 5.3: This section contains standards for storm water drainage facilities and indicates how and where runoff can be directed.
4. Section 6.3: This section requires an Erosion and Sedimentation Plan which will accommodate the increased run-off caused by changed soil and surface conditions during and after development.
5. Section 6.6: Requires any land use to comply with the Floodplain Development Ordinance of the Zoning Ordinance and Building Code.

Excavation Regulations

The Excavation Regulations govern all mining and excavation operations and require a permit from the Planning Board prior to operation. Provisions of these regulations relating to the protection and management of water resources are summarized below:

1. Section 1: Two of the purposes of the regulations are to preserve the natural assets of soil, water, forests and wildlife; and to prevent land and water pollution.
2. Section 7.6: "Appropriate erosion, sedimentation, air and water quality measures shall be integrated into the excavation process. Excavations shall comply with the Erosion and Sedimentation Control provisions in the Town's Subdivision Regulations."
3. Section 7.8: "Excavation practices which result in siltation in streams or degradation of any water supplies are prohibited."
4. Section 7.16: "No excavation shall substantially damage any aquifer identified on mapping by the U.S. Geological Survey."
5. Section 7.19: "Excavation operations shall be set back at least 25 feet from wetlands...and it must be demonstrated that no sedimentation of the wetlands will occur as a result of the excavation."
6. Section 10: "The maximum depth of excavation shall be a minimum of four feet above the seasonal high water table existing at the location in question before commencement of excavation."

Health Ordinance

Hampton Falls has a Health Officer/Percolation & Septic System Inspector who is charged with enforcing the state regulations pertaining to water quality standards in accordance with RSA 147. Hampton Falls does not have a separate health ordinance, but there are ordinances and regulations for septic system design that pertain to public health. The regulations are enforced by the Town's Health Officer and the Hampton Falls Board of Health, which is actually the Board of Selectmen.

VII. SUMMARY OF LOCAL REGULATORY EFFORTS

The following discussion summarizes which local ordinances and regulations have the potential to impact specific water resource concerns, including: sedimentation and erosion control; surface water flows; groundwater recharge; managing existing and potential contaminants; flood storage; wetland encroachment; nutrient levels; and wildlife and fisheries.

In terms of sedimentation and erosion control - The grading, drainage, and erosion control measures set forth in the Site Plan Review Regulations, roadway specifications, and Subdivision Regulations are helpful in this respect. Also, the regrading requirements for excavation operations are of benefit. Erosion can degrade water quality through the introduction of excessive sediments into the water resource. This can increase the water's turbidity, increase the intensity of biological activity, and displace oxygen within the water. The Town may want to consider adopting some or all of the provisions in the model erosion and sedimentation control regulations recently developed by the Rockingham County Conservation District. These model regulations are much more extensive and comprehensive than the existing regulations in place in Hampton Falls.

In terms of surface water flows - The grading, drainage, and erosion control requirements of the Subdivision Regulations, Site Plan Review Regulations, and roadway specifications are helpful in this respect. The various provisions of the above mentioned regulations help to control the amount of surface water generated at a building site by channeling it in an environmentally safe manner. Problems associated with excessive surface water flows are flooding (in some cases), the transportation of surface pollutants into nearby surface water holding areas, plus erosion and sedimentation. Once again, adoption of the model erosion and sedimentation control regulations is recommended as a means to control surface water flows.

In terms of groundwater recharge - The surface water and erosion control measures specified in the Subdivision and Site Plan Review Regulations are helpful in this regard. One zoning provision that the Town should consider adopting is lot coverage limitations, which many area communities have enacted to control the amount of impervious surface for each lot. Controlling erosion and surface water run-off allows the water to permeate the ground and recharge the aquifer, instead of rolling off the surface and heading elsewhere. Limiting a site's impervious area is helpful in the same manner. Through this type of requirement, open land is available for precipitation to seep into the ground and recharge the aquifer.

In terms of managing existing and potential threats - Within the Zoning Ordinance, the requirement that all industrial uses are allowed only by special exception is of benefit in managing potential threats to water resources. Limiting the permitted uses within wetland areas is also helpful. In a less direct manner, the erosion and surface water control provisions of the Subdivision and Site Plan Review Regulations are beneficial. In 1991 the Town adopted a prohibition against replacing or installing underground tanks for the storage of motor fuels or heating oils that are less than 1,100 gallons. This will limit the number of new underground tanks substantially and mean that the threat from leaking tanks will be reduced. Tanks larger than 1,100 gallons are regulated by the DES and are allowed in Town.

The Town's existing threat prevention efforts could be strengthened in a number of ways. The Site Plan Review Regulations could be amended to contain standards to apply to new commercial and industrial developments which use, store, or transport potentially hazardous materials. Such standards could include giving the Planning Board the power to require environmental impact studies (such as hydrogeologic studies or risk assessment studies). The Board should use these powers in a discretionary manner; that is, the Board should determine whether such studies are necessary on a case-to-case basis. The majority of development proposals will not necessitate such studies, however, the Board should have the power to require such studies when appropriate.

In terms of flood storage - The grading, drainage, and erosion control provisions of the Subdivision and Site Plan Review Regulations help to maintain flood storage by reducing and controlling the amount of surface water run-off which could eventually find its way to the floodplain, thus contributing to the overburdening of the floodplain. The Town participates in the National Flood Insurance Program and has adopted a Floodplain Development Ordinance. No regulatory changes are suggested here.

In terms of wetland encroachment - The limited number of permitted uses within the Town's wetland areas helps to preserve their integrity. The required wetland buffer zones are extremely beneficial. Limiting development in close proximity to wetland areas helps to minimize land disturbance within the buffer, thus reducing the chance

that erosion from development could find its way into wetland areas. The Town's existing wetland protection provisions are quite strong. The Town may want to consider the new wetland definition and delineation standards recently adopted by the N.H. Wetlands Board so that there will be some consistency between the local and state level.

In terms of nutrient levels - Hampton Falls does not have any specific regulations which deal with this issue. However, in an indirect manner, the surface water and erosion control provisions of the Subdivision and Site Plan Review Regulations do help to control nutrient levels by reducing surface water run-off flows. Excessive surface water flows can carry nutrients across the land into surface water resources, thus exacerbating the problems associated with nutrient overloading. The adoption of more comprehensive erosion and sedimentation control regulations would be of benefit.

In terms of wildlife and fisheries - The Town does not have any specific regulations or ordinances which deal with these issues. Any existing impacts on wildlife and fisheries within Hampton Falls are an indirect result of the Town's regulatory efforts. No regulatory changes are proposed in this regard.

VIII. ANALYSIS

Analysis Regarding Water Supplies

Almost all of Hampton Falls is served by individual private wells and it is assumed that the situation will remain the same for the at least the next ten years. A detailed discussion of the Town's existing and future water demands is presented in the "Assessment of Growth in Demand for Water" section of this document. Hampton Falls is projected to need 241,440 gallons of water a day in the year 2000. Even if commercial and industrial water demands dramatically increase in Hampton Falls, there should still be a surplus of water in Town.

Based on the Town's projected water demands for the next ten years, the establishment of a municipal water system will not be necessary. The summary of well completion reports in Appendix B indicates that, of 114 wells reported as being completed between January 1984 and December 1991, 90 percent of these wells had yields of three or more gallons per minute, generally accepted as being sufficient for typical domestic needs. Since the majority of wells are outside of the identified aquifers, it must be concluded that adequate groundwater supplies for domestic use exist in virtually all areas of Hampton Falls.

Analysis Regarding Other Water Resource Purposes

This section addresses section 505.02 of the Administrative Rules for Local Water Resource Management and Protection Plans.

1. **Groundwater and surface water discharges:** No significant sources discharge wastes into the Town's groundwater or surface water. Accordingly, there is no current need to determine the "assimilative capacity" of Hampton Falls' water resources.

Detailed studies of the assimilative capability of groundwater and surface water would logically fall under the State's duties since it issues discharge permits and has greater technical and financial capacities than municipalities.

2. **Recreation:** Relative to inland towns in Rockingham County, Hampton Falls has many streams and rivers. The Town also contains an extensive shoreline along the Hampton River, which is part of the Hampton/Seabrook Estuary. Fishing, boating, ice skating and swimming are the most common recreational uses of the rivers and streams in Hampton Falls.

Hampton Falls owns a boat landing located south of Depot Road which provided public access to Hampton Falls River and Hampton Harbor. The 5.7 acre site has a gravel loading ramp for boats. Whittier Pond, which is located west of

Lafayette Road, is used for ice skating in the winter. The Town does own some conservation land along the Taylor River which could provide public access for canoeing and fishing.

The recreational opportunities, which are very valuable to Hampton Falls are outlined in detail in the Recreation Chapter of the Master Plan.

3. Wetlands: Wetlands are important, valuable, natural resources and worthy of protection from inappropriate use. They have been found, in general, to provide critical ecological functions. The filling of and use of wetlands for building construction not only destroys wetlands and their benefits, but may lead to groundwater contamination as well. Leaching fields constructed in filled areas are likely to be placed too near the seasonal high water table below and to have an inadequate receiving layer for proper treatment of the septic system's effluent.

There is an ongoing need to protect wetlands in Hampton Falls. Statewide, wetlands are under increasing development pressure due to the depletion of the most developable land. Although the State has laws and regulations in place to protect wetlands, they do not always provide the degree of protection needed. For these reasons, local control over the use of wetlands should remain in effect indefinitely. The Town of Hampton Falls has recognized the importance of preserving wetlands, and has acted accordingly by establishing a Wetland Conservation District Ordinance.

Hampton Falls is fortunate to have a series of aerial photographs depicting wetlands at a scale of 1" = 200', prepared through the N.H. Office of State Planning Coastal Program. The maps and an accompanying report are entitled, "Phase 2 Report, Town of Hampton Falls, the Coastal Wetlands Mapping Program, New Hampshire," prepared by Normandeau Associates, Inc., June 30, 1986.

4. Fisheries: Hampton Falls has many rivers and brooks that are suitable for fishing. The N.H. Fish and Game Department lists Winkley Brook in a publication entitled, Recommended Fishing Waters, as a place to catch brook trout.

Historically, the Hampton-Seabrook Estuary has been a productive area for harvesting clams and lobsters. It is also a nursery for many small creatures which contribute to the food chain for larger fish species. Many of the commercially significant fish species in the prime fishing area of the Gulf of Maine depend on the estuary for some part of their life cycle. Some of the most important fish species caught off the coast include cod, flounder, hake, haddock, pollock, cusk, halibut and herring.

The tidal marsh area of Hampton Falls, which is known as the Hampton Flats, is an important part of the ecosystem. The estuary has been closed to the harvesting of shellfish for several years due to chronic water quality problems. Lobstering is an important industry in New Hampshire. According to the UNH Sea Grant Extension Program, there are 35 lobster boats operating out of Hampton Harbor.

Hampton Falls must safeguard its surface water quality in order to provide the opportunity for commercial and recreational fishing for present and future townspeople.

5. Wildlife Habitat: River, stream, and wetland corridors provide the richest habitat for the greatest number of fish, wildlife, and flora. Fish and wildlife populations cannot succeed within limited habitat confines. Native wildlife must have travel lanes within their range, and waterfowl and other birds must have ground-level nesting habitat. Protection of these linear corridors is essential to the stability of wildlife populations.

Riparian corridors such as shorelands also provide a range of recreational benefits such as canoeing, hiking, fishing, birding, horse trails, cross-country skiing, picnicking, etc. Shorelands are also sensitive due to flooding, erodibility, and proximity to open water. Moreover, soil type and percent slope

typically limits the development potential of a shoreland area.

The Hampton-Seabrook Estuary provides prime habitat for many wildlife species. A wide variety of birds inhabit the estuary, including herring gulls, great blackbacked gulls, Boneapartes, ring-billed gulls, laughing gulls, Canada geese, mallards, black ducks, great cormorants, double-crested cormorants, common terns, great blue herons, plovers, and sandpipers. Harbor seals are often found basking on offshore rocks.

The N.H. Natural Heritage Inventory (NHI) has identified five areas within Hampton Falls where rare and endangered wildlife species have been located. These five habitat areas are shown on Map I - "Important Wildlife Habitats". The two species of rare and endangered wildlife that are found in Hampton Falls are the common tern and the great blue heron. The common tern has received the highest ranking from the NHI, S1, meaning that it is critically imperiled in the State because of extreme rarity (5 or fewer occurrences). At the global level, the common tern has been ranked as G5, meaning that it is demonstrably secure globally, though it may be quite rare in parts of its range, particularly at the periphery. The State has afforded the common tern the legal status of "State Endangered" under RSA 217-A:3, III and IV. One of the three known great blue heron rookeries in the coastal zone is located in Hampton Falls. The NHI's statewide ranking of the great blue heron is S3, meaning it is rare in the State (on the order of 20 or more occurrences). It's global ranking is G5, which is the same as the common tern. In an effort to protect the rare and endangered species, the NHI does not indicate which species are located in the identified wildlife habitats.

6. **Hydropower:** There are no hydropower producing dams in Hampton Falls, nor are there plans for any in the future. The hydropower market is not as strong as it was during the 1970's and early 1980's (during the height of the nation's energy shortage) because of uncertain markets for electricity, environmental restrictions, and alternative power sources which are more economical.

If any hydropower facilities are proposed in the future, no decision should be made by Town officials until a thorough site review and evaluation is performed. The cumulative impacts of hydropower dams along the river should also be considered.

7. **Fire Protection:** The Hampton Falls volunteer fire department is located in the new municipal safety complex next to the Town Hall. There are no fire hydrants in Town, but there are numerous fire ponds equipped with dry hydrants located throughout the Town. Large developments are often required to construct fire ponds to provide adequate fire protection. The Planning Board sends all large development plans to the Hampton Falls Fire Department for their review and recommendations.
8. **Conflicting Uses:** The only known conflict that exists between competing uses involves the use of the Hampton-Seabrook Estuary for recreational and commercial fishing and for the receptacle of wastewater from the Hampton sewer treatment plant and malfunctioning septic systems around the estuary. The planned construction of a sewer treatment plant in Seabrook and improving existing septic systems would mitigate the problem.


Management of Potential Threats

The previous section entitled, "Identification of Potential Threats to Water Resources", presents a full discussion of existing and permitted future land uses which pose threats to water resources within Hampton Falls. A summary of the mitigation measures designed to manage the potential threats to identified water resources is presented below.

In terms of existing threat sources, Hampton Falls has only a few businesses which pose potential threats to water resources due to their storage, use and disposal of hazardous substances. For these establishments, the proper storage and disposal of

Town of Hampton Falls, N.H.

MAP I Important Wildlife Habitats



Legend

Important Wildlife Habitats

Source: N.H. Natural Heritage Inventory

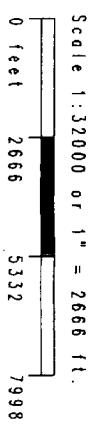
Sources:

GRANT 1:24,000 quads from Computer Systems Research Center, UNH, December 1991.

These digital layers are registered to MAD 83 and N.H. State Plane Coordinates.

Town of Hampton Falls Planning Board, 1991.

Rockingham Planning Commission, 1992.



Prepared by the Rockingham Planning Commission
March 27, 1993

hazardous substances should be the Town's primary focus, whether through regulatory or non-regulatory efforts. The Planning Board could require a periodic inspection program as a condition of approval for some businesses. An inspection program could be arranged by the Town's Code Enforcement Officer or through the Fire Department. Such a program could be arranged as a condition of an occupancy permit.

Another way to deal with potentially hazardous uses permitted by right, would be to reclassify these uses as requiring a special exception within the Zoning Ordinance. This would give the Planning Board and Board of Adjustment more control in setting performance standards and other conditions of approval which would protect water resources.

The Town could also improve its management of potential threats by improving its database. There is a lack of water quality data for the Town's three aquifers and surface waters. In order to adequately evaluate potential development projects and their impact on water resources, the Planning Board needs to obtain and review site specific water quality data.

Additional management and protection techniques for water resources are described in the following section.

IX. RECOMMENDATIONS FOR NEW OR REVISED POLICIES AND PROGRAMS

In an effort to protect and wisely manage the water resources of Hampton Falls, the Town can pursue a number of regulatory and non-regulatory strategies. Reliance on a single method is not advised. Rather, it is recommended that the Town use a combination of strategies. While the following recommendations may not all be implemented by the Town, the items described below are an attempt to provide the Town with a variety of options for protecting and managing water resources in a sound, rational manner.

Nonregulatory Programs

It is recommended that the Town of Hampton Falls employ the following nonregulatory programs in order to manage and protect its water resources:

1. Educational and informational programs should be developed in order to provide the general public with an understanding of the operation, proper use, and maintenance of septic systems and leach fields (i.e., regularly pumping out septic tanks, avoiding disposal of hazardous or harmful wastes, etc.) This would likely prevent unnecessary system contamination and failures, thereby protecting surface and groundwater resources.

A pamphlet on the proper maintenance of septic systems and leachfields has been prepared by the Granite State Septic System Designers and Installers Association and the University of New Hampshire Cooperative Extension Service. The most feasible option for distribution would be to have the Town's Code Enforcement Officer distribute the pamphlet when inspecting new or replaced septic systems. For more information please contact the local Cooperative Extension Service in Brentwood.

2. The Town should investigate options for septage disposal as required in RSA 149-M:13. The law requires that every town either have its own septage disposal facility or a suitable disposal arrangement with another community. The Town could either deal with this problem on its own by signing a formal contract with Hampton, or within a regional framework as part of Hampton Falls' membership in the Southeast Regional Solid Waste District.
3. The Town should continue to participate in any regional or inter-community household hazardous waste collection programs, such as the recent collection effort in Kingston organized by the Southeast Regional Solid Waste District. Due to cost considerations, opportunities for household hazardous waste disposal have been infrequent in the region; in many cases, a citizen only has one opportunity per year to dispose of household hazardous wastes.

The Town needs to take a more pro-active course of action in terms of dealing with the household hazardous waste disposal problem, either on its own or as a member of the Southeast Regional Solid Waste District. Perhaps communities within the District could arrange to have a space within their solid waste disposal sites where citizens could drop off their household hazardous wastes for proper disposal at a later date. Another option would be for the District to establish a regional household hazardous waste drop-off site. This would vastly increase a citizen's options for disposal of such wastes, even if this site were open only one day a week or one day a month. In the meantime, the number of household hazardous waste collection days need to be increased and the Town is encouraged to work towards this end.

Education programs on the proper storage and disposal of household hazardous waste materials should be considered by the Town. The pamphlet entitled, "Hazardous Materials in Your Home", prepared by the University of New Hampshire Cooperative Extension Service in conjunction with the Governor's Energy Office, could be distributed on a Town-wide level. Perhaps sending the pamphlet along with property tax bills would be the most feasible option of distribution. For more information please contact the local Cooperative Extension Office in Brentwood.

4. The Hampton Falls Conservation Commission should continue to work with owners of properties containing critical water resources to obtain such areas by gift, grant, or bequest, and/or obtain covenants or easements. This is a great way to protect environmentally sensitive lands at minimal cost to the community in terms of tax dollars. It is possible that the only costs associated with land protection efforts involving gifts, grants, bequests, and the establishment of covenants and easements would pertain to survey, legal, and recording fees.

Hampton Falls should make use of state and federal land acquisition programs as a means of protecting environmentally sensitive lands. Semi-public and regional organizations (such as the Society for the Protection of NH Forests, NH Audubon Society, and the Rockingham Land Trust) may also be helpful in this regard. As may be appropriate in certain circumstances, the Conservation Commission should consider including in the Capital Improvements Program recommended funding for acquiring land within critical resource areas. This strategy should be pursued when non-fee or easement acquisition efforts are unsuccessful.

5. Continue to appropriate money to the Conservation Commission's land acquisition fund to be used for the protection of land and water resource conservation areas. There are generally five different methods for protecting these natural areas:
 - a) Land Purchase;
 - b) Option of Right of First Refusal;
 - c) Purchase and Resale;
 - d) Bargain Purchase;
 - e) Easements - Conservation Restrictions and/or Purchase of Development Rights

Conservation funds enable the Town to act on short notice when a valuable parcel of land is threatened. This land may be of critical importance for protecting significant wetlands, shoreland, wildlife habitat, or recreational areas.

6. The Conservation Commission should continue to work with people who own land having conservation potential by promoting the tax incentives associated with the donation of land or easement restrictions. The Current Use Assessment Program also provides tax abatements on parcels of 10 acres or more or on "natural preserves" of any size.
7. The Hampton Falls Planning Board should work with their counterparts in surrounding towns to promote land use planning practices which are mutually beneficial to protect common watersheds, wetlands, and aquifers. Hampton Falls may choose to develop intermunicipal agreements (pursuant to RSA 53-A) to protect these shared resources. RSA 4-C:3 authorizes agreements between municipalities to develop regional water resources management plans.

8. Develop a program to reduce the amount of road salt used, especially in aquifer recharge areas. The following methods should be employed:
 - a) Emphasize mechanical snow removal;
 - b) Mix sodium chloride with calcium chloride and/or sand to reduce the total amount of sodium chloride applied;
 - c) Periodically re-calibrate salt spreaders so that they apply the correct amount of salt/sand mix; and
 - d) Post areas where reduced salting is practiced, which will encourage drivers to reduce speeds and drive more cautiously.
9. Develop a program to inspect and maintain drainage control facilities, (e.g. catch basins and detention ponds, and culverts) throughout Town. If these devices become filled with sediment, they can no longer perform their function.
10. The Town should consider developing an assistance program for the removal of underground storage tanks. Perhaps a pamphlet could be published which addresses the following items: tank placement and replacement, tank construction, leak detection methods, proper procedures for removal, and a description of the state program which offers limited financial assistance for tank removal and contamination remediation. The Town should coordinate its program with the Groundwater Protection Bureau of NHDES.
11. In an effort to stay informed on the larger picture of overall watershed development, the Planning Board should ask to be put on the mailing lists for the agendas of the Exeter, Hampton, Kensington, South Hampton and Seabrook planning boards. In turn, the Hampton Falls Planning Board could send its monthly agenda to the above mentioned communities. This will help to keep the Planning Board informed on developments which may affect the Town's water resources. It will also go a long way towards inspiring inter-community communication and cooperation. Reviewing the agendas of abutting communities could be a monthly agenda item for the Planning Board.
12. Encourage farms to employ Best Management Practices (BMP's) as prescribed by the Soil Conservation Service. BMP's include storage of manure in concrete pits, and more efficient and better timed application of fertilizer and pesticides.
13. Develop a water quality data base for monitoring contamination events in both surface and ground waters throughout Town.
14. The Planning Board should be kept informed by the Rockingham Planning Commission regarding the availability and appropriateness of regional or State water resource data.

The costs of instituting these nonregulatory programs are expected to be variable, but relatively low. For example, any assistance provided by the Rockingham Planning Commission is either at reduced cost or no cost, as part of Hampton Falls' annual membership in the Commission.

Costs associated with land conservation efforts involving donations of land and easements would involve survey, legal, and recording fees. The outright purchase of these lands or the purchase of development rights would obviously entail substantially greater costs. Land conservation is discussed in greater detail in the Conservation and Preservation chapter of the Master Plan.

Household Hazardous Waste collection and disposal costs, which can be expensive even in a regional program, will likely be covered by the dues paid to the Southeast Regional Solid Waste District. Matching funds are available from the Waste Management Division of the N.H. Department of Environmental Services.

These nonregulatory programs could probably be carried out by existing voluntary and paid manpower. It should not be necessary to hire additional personnel to conduct or supervise any of these activities.

Regulatory Programs

The Town of Hampton Falls enforces a zoning ordinance, a building ordinance (BOCA), excavation regulations, subdivision regulations, and site plan review regulations. All have been reviewed and found to contain provisions specifically pertaining to water resource protection.

All options for regulatory programs required by the Rules were considered, and the following new or revised regulatory programs are recommended in order to improve and/or enhance existing local water resource management and protection mechanisms:

1. An Aquifer Protection Ordinance should be adopted by Hampton Falls to protect aquifers identified on Map F, "Aquifers and Wells". As explained in Section II, this information is from the USGS Aquifer Delineation Maps published in 1993.

The Planning Board, in consultation with the Conservation Commission, should decide which of the three identified aquifer areas should be included in the overlay district. Due to the Gruhn property hazardous waste site being located directly over the Newfound Hill aquifer, the Town's protection efforts may want to focus on the remaining two aquifers.

The provisions of an aquifer protection ordinance could include a prohibition on potentially hazardous land uses, performance standards for compatible land uses, a limitation on the amount of a building site which could be covered by impervious surfaces (buildings, pavement, etc.), and provisions for retaining, treating and discharging of surface water runoff above the aquifer's surface. Assistance in preparing the ordinance can be obtained from the Rockingham Planning Commission.

2. As the Town has an extensive amount of shoreland frontage, both along its waterbodies and watercourses, the Town should consider establishing a shoreland protection district and ordinance. In 1991, the State Legislature amended RSA 483-B to enable local communities to prepare and adopt shoreland protection districts. Such a district could include the Town's shoreland along its major watercourses such as Taylor River, Hampton Falls River, and Browns River and along other smaller brooks. Items to address in such an ordinance could include:

- a) Setbacks for buildings and septic systems;
- b) Cutting restrictions for timber removal;
- c) Minimum shoreland frontage requirements; and
- d) A prohibition on certain high risk land uses.

There are a variety of forms which a shoreland protection district could take. For more information on this subject, please contact the Rockingham Planning Commission, or obtain the "Model Shoreland Protection Ordinance" prepared by the NH Office of State Planning.

3. A Cluster/Open Space ordinance allows a development to concentrate a higher density of dwelling units in exchange for committing an adjacent area to be common open space in perpetuity. The Town should consider adopting such an ordinance so that development can be directed away from areas of high aquifer recharge, shorelands, flood zones and wetlands. For a detailed discussion of this concept, refer to the Housing Chapter.
4. The Town's erosion and sedimentation control regulations should be updated by the Planning Board to incorporate the provisions from the Rockingham County Conservation District's model ordinance. These regulations provide standards and guidelines for development planning, for the purpose of controlling erosion and preventing sediment transport to wetlands and streams.
5. Hampton Falls should develop its own Underground Storage Tank (UST) regulations to supplement the existing prohibition against installing underground fuel tanks less than 1,100 gallons. Requirements to be considered are as follows:

- a) Require the removal of all abandoned tanks;

- b) The Zoning Ordinance should be amended to require that underground storage tanks comply with relevant setback requirements (especially the setbacks for wetlands and floodplains);
- c) Amend the Site Plan Review regulations to require development plans to identify the location, type, content and capacity of each proposed underground petroleum and chemical storage tanks in order to maintain a current inventory.
- d) Underground storage tanks should be prohibited as part of any aquifer protection district and ordinance.
- e) The Board could work with the Code Enforcement Officer to develop standards for the placement of underground storage tanks.
- f) For development projects which propose using underground storage tanks, the Board could require a monitoring program and the periodic testing of monitoring equipment as a condition of approval.

The N.H. Water Resources Action Project has developed other such guidelines which Hampton Falls could use to develop and administer a local UST regulatory program (source: "Guidelines for Controlling Underground Storage Tanks", Tools for Community Water Supply Protection, N.H. Water Resources Action Project, 1985, prepared by Sharon F. Francis, N.H. Natural Resources Forum, Sky Farm, Box 341, Charlestown, NH 03603).

- 6. A State septic system inspector will issue a permit for a system that has been evaluated (before covering) and found to operate properly. Hampton Falls should grant a certificate of occupancy only after this State permit has been received.
- 7. Amend the Zoning Ordinance to include a maximum coverage percentage for commercial and industrial lots. This would provide for surface runoff water to infiltrate into the ground and recharge local groundwater supplies.
- 8. Large subdivisions and the associated roads and drainage facilities can have a negative impact on the environment, including water resources. The Subdivision Regulations should be amended to require an environmental impact study for large subdivisions to insure that the damage to the environment is minimized.
- 9. Amend the Subdivision and Site Plan Review regulations as follows:
 - a) Promote the use of catch basins designed to trap oil and sediments;
 - b) Encourage road designs which require less use of de-icing chemicals (e.g. roads with minimal slope and/or turning radius, etc.);
 - c) Require that additional runoff created by a development be retained on-site and that no degradation of water quality shall occur. This will provide for groundwater recharge through the infiltration of retained water. This provision will also safeguard abutting properties from increased flows which can cause flooding and erosion damage.
- 10. The Hampton Falls Conservation Commission should consider mapping and documenting the prime wetlands as authorized under RSA 483-A:7, and subsequently, recommend that their adoption as part of the Zoning Ordinance in accordance with RSA 675:3. The State of New Hampshire Wetlands Board is required to give special consideration to prime wetlands during their review of dredge and fill permit applications. The wetland maps from the State, prepared by Normandeau Associates are very helpful in identifying areas to study. Field checking the accuracy of the maps and prioritizing wetland values are the main tasks the Conservation Commission would have to undertake.
- 11. The Planning Board should consider requiring the minimum lot size in Town to be determined by ability of the soils to handle the sewage. The new soil-based lot size standards developed by the NH Ad Hoc Committee on Soil Type Lot Size Regulations are recommended. These standards were developed by a group of soil scientists, hydrologists, engineers, planners, and septic system installers from both the private and public sectors. The new standards are an attempt to provide supportable scientific data for establishing lot sizing requirements. The goal was to create minimum lot sizes, based on soil types, which would be able to support discharge from a leachfield without impairing groundwater quality below

the standards set forth in the federal Safe Drinking Water Act. This would require amending the Zoning Ordinance to specify the minimum lot size but indicating that they could be larger depending on the lot size required in the Subdivision Regulations, which would also be amended. For more information on this subject, please contact the Rockingham Planning Commission or the local Soil Conservation Service office in Exeter.

12. The Subdivision and Site Plan Review Regulations should be amended to require a High Intensity Soil Survey, or HISS mapping for proposed development sites. Such a survey should be a submission item for all land development applicants. Although the Planning Board sometimes requests such surveys from development applicants, it would be helpful if the Subdivision and Site Plan Review Regulations clearly listed HISS mapping as a requirement. HISS mapping is site specific and much more detailed than the maps and documents prepared by the Soil Conservation Service. It is suggested that HISS mapping be required for all development proposals.
13. The Planning Board should consider amending the Wetlands Conservation District Ordinance to incorporate the new wetlands delineation standards adopted by the NH Wetlands Board and federal agencies. Under this new method, wetlands are delineated on the basis of hydrophytic vegetation, hydric soils, and wetlands hydrology, in accordance with the techniques outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (January 10, 1989). Having a uniform wetland definition would eliminate the confusion that exists when there are two or three wetlands boundaries shown on a plan, each based on a different delineation method. The new method is widely accepted and is more scientifically defensible.

The Hampton Falls' Zoning Ordinance contains a Growth Control Ordinance which limits building permits when the enrollment of the Lincoln Akerman School reaches 80 percent of capacity. The protection of water resources was not likely a consideration when the ordinance was adopted. No changes are recommended to the ordinance.

Generally, the cost of preparing proposed amendments to regulations and ordinances is minimal. Technical assistance can be provided at low or no cost by the Rockingham Planning Commission or the Rockingham County Conservation District. There would be some expense involved with complying with the statutory requirements for the publication of hearing notices. The Town should not need to hire any personnel for the preparation of the proposed amendments to regulations and ordinances.

Since the goal of the surface and groundwater portions of this Plan is to assure that local land use decisions resulting from this planning process are based upon the most comprehensive and reliable scientific and technical information available, it is important that all implementing ordinances and regulations should include (1) a process which allows applicants for local approvals to present documented scientific and technical information which differs from the information used to prepare this Plan; and (2) the implementing ordinances and regulations should also include mechanisms which will enable local decision makers to consider the scientific and technical information submitted by the applicants prior to making a final decision.

APPENDICES

APPENDIX A

Soil Potential Ratings For Development

Soil Symbols	Septic Tank Absorption Field	Local Roads and Streets	Dwellings with Basements	Overall Development Rating
12A	M	VH	VH	H
12B	M	VH	VH	H
12C	M	H	H	M
12E	VL	VL	VL	VL
26A	H	VH	VH	VH
26B	H	VH	VH	VH
26C	M	H	H	H
26E	VL	VL	VL	VL
29A	M	H	VH	M
29B	M	H	VH	M
32A	L	H	VH	M
32B	L	H	H	M
32C	L	M	M	M
33A	VL	VL	M	VL
38A	M	H	VH	M
38B	M	H	VH	M
42B	VH	VH	VH	VH
42C	H	H	H	H
42D	M	L	L	M
43B	VH	H	VH	VH
43C	H	M	H	H
43E	VL	VL	VL	VL
44B	M	H	VH	H
44C	M	M	H	M
45B	M	H	VH	H
45C	M	M	H	M
45D	M	L	L	M
62B	VH	VH	VH	VH
62C	H	H	H	H
63B	VH	H	VH	VH
63C	H	M	H	H
63D	M	L	L	M
66B	M	H	VH	M
66C	M	M	H	M
66D	L	L	L	M
67B	M	H	VH	M
67C	M	M	H	M
67D	L	L	L	L
67E	VL	VL	VL	VL
97	VL	VL	VL	VL
115	VL	VL	VL	VL
125	VL	VL	VL	VL
129B	M	H	H	M
129C	L	M	M	M
134	VL	VL	VL	VL

Ratings: VH -- Very High
 H -- High
 M -- Medium

 L -- Low
 VL -- Very Low

Soil Potential Ratings For Development

Page 2

Soil Symbols	Septic Tank Absorption Field	Local Roads and Streets	Dwellings with Basements	Overall Development Rating
140B	M	L	M	M
140C	L	L	M	L
140D	VL	VL	L	VL
141E	VL	VL	VL	VL
295	VL	VL	VL	VL
298	----- too	variable -	not rated -----	-----
299	" "	"	"	"
305	VL	VL	L	VL
313A	M	H	VH	M
313B	M	H	VH	M
314A	VL	VL	M	VL
343C	H	M	M	M
343D	VL	VL	VL	VL
395	VL	VL	VL	VL
397	VL	VL	VL	VL
446A	M	H	VH	H
446B	M	H	VH	H
447A	M	H	VH	M
447B	M	H	H	M
447C	M	M	M	M
460B	M	M	M	M
460C	L	L	M	M
495	VL	VL	VL	VL
497	VL	VL	VL	VL
510A	M	VH	VH	H
510B	M	VH	VH	H
510C	M	H	H	M
510D	L	L	L	L
531B	M	H	VH	M
533	VL	VL	M	VL
538A	VL	VL	M	VL
546A	VL	VL	M	VL
547A	VL	VL	M	VL
547B	VL	VL	M	VL
597	VL	VL	VL	VL
599	L	M	M	M
656A	VL	VL	M	VL
657A	VL	VL	M	VL
657B	VL	VL	M	VL
699	----- too	variable -	not rated -----	-----
799	H	M	H	H
997	VL	VL	VL	VL

Ratings: VH -- Very High
H -- High
M -- Medium

L -- Low
VL -- Very Low

SUMMARY OF WELL COMPLETION REPORT DATA FOR THE TOWN OF HAMPTON FALL

as
shown
on
Map & Well*

On Map & Aerial	ROAD	MAP	PARCEL	ELEV	DCOMP	USE	PSN	TYPE	TOTD	BOVD	CASING	YTH	YTD	YTD	SAL	OVERBURDEN	DC	NOTE
106.0101	Baldwin Pl	0004	0011			89/02/03	1	1	1	200.0	66.00	81.00	3	1.00	20.00		2	YL
35 106.0035	817th Dr	2	50-438	90.0	86/04/02	1	1	1	200.0	55.00	67.00	3	1.00	25.00	25.00	2-3-2	1	YL
9 106.0009	Briar Ln	7	60-3	20.0	84/09/19	1	1	1	120.0	18.00	60.00	3		25.00		1	2	
106.0094	Briar Ln			88/09/15	1	1	1	1	150.0	50.00	60.00	3		30.00		4	2	
63 106.0063	Briar Ln	2	14E-2	10.0	86/12/11	1	1	1	150.0	40.00	51.00	3	1.00	10.00		2-3	2	YL
27 106.0027	49 Brown Rd	5	54	40.0	85/06/25	1	1	1	300.0	45.00	59.00	3	3.00	1.50		3	2	YL
44 106.0044	27 Crank Rd	1	67-7	60.0	86/07/04	1	1	1	250.0	20.00	31.00	3	1.00	20.00		3-2	2	YL
106.0082	38 Crank Rd	0-12812		87/07/27	1	1	1	1	350.0	28.00	35.00	3	1.00	4.00	15.00	12-2	1	YL
45 106.0045	7 Crank Rd	1	72	80.0	86/07/22	1	1	1	150.0	35.00	51.00	3	1.00	15.00		2	2	YL
106.0076	Crank Rd		25	87/01/05	1	1	1	1	120.0	25.00	35.00	3		18.00		4	2	
51 106.0051	Crank Rd			60.0	86/06/09	1	1	1	120.0	32.00	37.00	3		10.00		2-4	2	
43 106.0043	Crank Rd	1	67-3	60.0	86/03/11	1	1	1	180.0	12.00	40.00	3		7.00		2	2	
33 106.0033	Curtis Rd	4	46-15	80.0	85/08/14	1	1	1	300.0	70.00	81.00	3	1.00	30.00		2-4-3-2	2	YL
49 106.0049	Dodge Rd	7	3	40.0	86/07/14	1	1	1	225.0	10.00	53.00	3	1.00	30.00		4-2-3	2	YL
1 106.0001	Drinkwater Rd	4	53.3	100.0	84/07/12	1	1	1	160.0	45.00	75.00			8.00		2-4	2	
12 106.0012	Drinkwater Rd			80.0	84/10/05	1	1	1	280.0	60.00	91.00	3	0.25	7.00		4	2	
18 106.0018	Drinkwater Rd			80.0	85/03/15	1	1	1	280.0	60.00	84.00	3		2.50		4	2	
106.0088	Evergreen Rd		Lot 11	88/04/22	1	1	1	1	275.0	52.00	67.00	3	1.00	25.00		124	2	YL
106.0093	Exeter & Brown Rd	5	Lot 22	88/05/31	1	1	1	1	500.0	68.00	83.00	3	1.00	2.00		124	1	YL
106.0078	307 Exeter Rd			87/08/12	1	1	1	1	280.0	8.50	28.00	3	3.00	28.00	11.50	2	1	
106.0095	Exeter Rd		221	88/06/21	1	1	1	1	140.0	23.00	52.00	3		40.00		1	3	
106.0096	Exeter Rd		221	88/06/21	1	1	1	1	140.0	23.00	52.00	3		40.00		1-4	2	
106.0098	Exeter Rd Rte 88	5 BUK 24	Lot 3	88/08/22	1	1	1	1	300.0	35.00	50.00	3	1.00	12.00		124	2	YL
13 106.0013	Exeter Rd Rte 88	6	37	100.0	84/11/03	1	2	1	225.0	5.00	20.00	3	1.00	5.00	10.00	1	1	
106.0086	Frynsman Rd		Lot 4	87/06/30	1	1	1	1	200.0	85.00	95.00	3	1.00	4.00		12-34	1	YL
2 106.0002	Goodwin Rd	1	77	60.0	84/07/27	1	1	1	400.0	20.00	32.00	3		3.00		2	2	
106.0085	Goodwin Rd		0001-0083 SA	87/10/15	1	1	1	1	500.0	20.00	35.00	3	1.00	1.00		234	1	YL
70 106.0070	Goodwin Rd			60.0	87/05/19	1	1	1	142.0	52.00	58.00			100.00		123	2	YL
11 106.0011	Goodwin Rd		7	80.0	84/05/08	1	1	1	220.0	60.00	101.00	3	0.17	8.00	1.00	4	2	
106.0075	Goodwin Rd			87/06/29	1	1	1	1	122.0	46.00	60.00	3	0.50	12.00		13	2	
106.0081	Hawk Hill Rd	1	30-3	87/07/31	1	1	1	1	300.0	135.00	150.00	3	1.00	60.00		123	1	YL
8 106.0008	107 Kensington Rd	2	5	60.0	84/09/25	1	1	1	180.0	30.00	36.00	3		20.00		2	2	
106.0109	166 Kensington Rd			89/09/15	1	2	1	1	450.0			3		1.00				YL
106.0103	71 Kensington Rd	837		89/09/21	1	1	1	1	250.0	36.00	41.00		1.00	30.00		5	2	
17 106.0017	76 Kensington Rd	7	35	40.0	85/03/29	1	1	1	300.0	9.00	21.00	3		3.00		1-3	1	
106.0083	Kensington Rd		2	87/07/28	1	1	1	1	185.0	75.00	85.00	3	1.00	8.00	12.00	4	2	
106.0107	Kensington Rd			89/10/30	1	2	1	1	160.0	18.00	40.00	3	1.00	50.00		3	2	
106.0106	Kensington Rd			89/10/27	1	2	1	1	200.0	18.00	40.00	3	1.00	20.00		3	2	
24 106.0024	Kensington Rd Rte 84			100.0	85/08/06	1	1	1	260.0	17.00	76.00	3		10.00		2-134	2	
7 106.0007	101 Lafayette Rd	8	63	20.0	84/09/13	1	1	1	80.0	27.00	61.00	3		25.00		2-1	2	
65 106.0065	109 Lafayette Rd	8	61	20.0	86/11/03	1	1	1	120.0	13.00	35.00	3		30.00		1	2	
55 106.0055	116 Lafayette Rd	8	50	20.0	86/08/06	1	1	1	150.0	57.00	70.00	3	1.00	15.00		14	2	YL
106.0089	124 Lafayette Rd			88/02/03	1	1	1	1	200.0	25.00	40.00	3	0.75	30.00		25	2	
106.0005	19 Lafayette Rd			87/09/14	1	2	1	1	182.0	22.00	30.00	3		20.00		2-4	2	
6 106.0006	95 Lafayette Rd	8	64	30.0	84/09/14	1	1	1	120.0	40.00	62.00	3		20.00		12	2	YL
62 106.0062	98 Lafayette Rd	8	43	30.0	86/10/03	1	1	1	150.0	58.00	70.00	3	1.00	40.00		14	2	
106.0112	Lafayette Rd			90/07/01	4	1	1	1	220.0	12.00	20.00	2	8.00	6.00	6.00	23	2	
68 106.0068	Martha's Court	2	82-4	60.0	86/07/22	1	1	1	150.0	20.00	42.00	3	1.00	20.00		12	2	YL
58 106.0058	Meadow Ln	8	84-11	40.0	86/09/18	1	1	1	285.0	39.00	51.00	3	1.00	12.00		1	2	
106.0091	Milburn Place		Lot 2	88/06/28	1	1	1	1	140.0	10.00	21.00	3		15.00		12	2	
106.0110	Milburn Place			90/05/04	1	1	1	1	300.0	6.00	20.00	3		8.00		3	2	
25 106.0025	7 Mill Ln	1	16-1	60.0	85/06/21	1	1	1	200.0	28.00	41.00	3		6.00		12	2	
61 106.0061	33 Old Coach Ln	8	83-13	20.0	86/11/14	1	1	1	250.0	51.00	66.00	3	1.00	20.00		11	2	
106.0056	Old Coach Ln	8	83-1	20.0	86/09/18	1	1	1	200.0	65.00	80.00	3	1.00	15.00		1	2	
106.0073	Old Coach Ln		1	86/09/18	1	1	1	1	200.0	50.00	65.00	3	1.00	15.00		1	2	YL

APPENDIX B

Page 1

APPENDIX B

Page 1

on Map F	MRB#	ROAD	MAP	PARCEL	ELEV	DCOMP	USE	RSN	TYPE	TOTD	BOXD	CASING	YTH	YTD	YTO	SAL	OVERBURDEN	QC	NOTE
59	106.0059	Old Coach Ln	8	83-6	10.0	86/09/19	1	1	1	225.0	59.00	75.00	3	1.00	10.00		124	2	
	106.0090	Old Coach Ln		Lot 12		88/07/05	1	1	1	300.0	42.00	53.00	3		5.00		4	2	
54	106.0054	23 Old Coach Rd	8	83-15	20.0	86/10/29	1	1	1	162.0	52.00	60.00	3	1.00	10.00		1-4	2	
10	106.0010	39 Old Coach Rd	8	83-11	20.0	85/01/19	1	1	1	190.0	55.00	61.00	3	1.00	6.00		1	2	
36	106.0036	Old Coach Rd	8	83-8	20.0	85/10/31	1	1	1	145.0	90.00	110.00	3	4.00	50.00	8.00	12-4	1	YL
3	106.0003	Old Coach Rd	8	83-3	20.0	84/09/08	1	1	1	120.0	30.00	67.00	3		25.00		4	2	
14	106.0014	Old Coach Rd	8		20.0	85/04/04	1	1	1	200.0	88.00	103.00	3	1.00	7.50		1-4	2	YL
22	106.0022	Old Coach Rd	8	83-16	40.0	85/05/08	1	1	1	240.0	78.00	88.00	3		50.00		4-3	2	
8	106.0084	Old Coach Rd	8	5-83	86/07/07	1	1	1	140.0	60.00	93.00	3	0.25	6.00		24	2		
15	106.0015	Old Coach Rd			20.0	85/03/27	1	1	1	300.0	80.00	102.00	3	1.00	3.00		1-4	2	YL
	106.0097	10 Old Stage Rd			88/10/04	1	1	1	400.0	24.00	40.00	3		2.00		12	2		
	106.0072	Orchard Dr		10	87/02/12	1	1	1	300.0	48.00	61.00	3	1.00	12.00		1-4	2	YL	
39	106.0039	Orchard Dr		29-8	50.0	86/04/21	1	1	1	280.0	90.00	105.00	3	0.50	20.00	30.00	3-4	2	
	106.0111	Prescott Ln		Lot 3														3	
34	106.0034	Prescott Ln			60.0	85/09/03	1	1	1	300.0	85.00	92.00	3	1.00	4.00		1-4-3-2	2	
37	106.0037	Prescott Ln		46-7	60.0	86/05/14	1	1	1	200.0	58.00	68.00	3	1.00	10.00		2-4	2	YL
41	106.0041	Prescott Ln		46-1	60.0	86/04/25	1	1	1	240.0	50.00	65.00	3	0.50	12.00	25.00	3-4	2	
32	106.0032	River Rd		29-6	60.0	86/01/10	1	1	1	275.0	75.00	87.00	3	1.00	10.00		2-3	2	
40	106.0040	River Rd		29-7	60.0	86/04/23	1	1	1	260.0	60.00	70.00	3	0.50	20.00	30.00	3-4	2	
60	106.0060	River Rd		2	60.0	86/11/15	1	1	1	300.0	60.00	68.00	3	1.00	10.00	20.00	123	2	YL
23	106.0023	River Rd		29-11	60.0	85/08/13	1	1	1	280.0	50.00	62.00	3		25.00		1-4	2	
26	106.0026	River Rd			60.0	85/11/21	1	1	1	240.0	47.00	57.00	3	0.75	50.00		2	2	
47	106.0047	River Rd		29-5	60.0	86/07/21	1	1	1	200.0	70.00	81.00	3	1.00	20.00		2	2	YL
16	106.0016	Rte 1			10.0	85/04/29	4	1	1	150.0	38.00	61.00	3	1.00	25.00		1-4	2	YL
	106.0019	Rte 1			85/05/24	1	1	1	120.0	10.00	21.00	3		15.00		2	2		
	106.0105	Rte 1			89/06/02	1	2	1	125.0	60.00	80.00	3	0.50	10.00		2-3	2		
106.0079	Rte 1				87/08/06	1	1	1	220.0	50.00	68.00	3		4.00		34	2		
50	106.0050	Rte 1			10.0	86/06/17	1	1	1	120.0	19.00	32.00	3		7.00		4	2	
21	106.0021	134 Rte 84		17-2	90.0	85/04/19	1	1	1	140.0	52.00	63.00	3		25.00		3	2	
106.0080	Rte 84				87/08/27	1	1	1	600.0	10.00	22.00	3	1.00	2.50		12	2	YL	
42	106.0042	Rte 84		94-1	110.0	86/01/22	1	1	1	120.0	75.00	89.00	3		20.00		3	2	
29	106.0029	340 Rte 88		22-2	80.0	86/01/01	1	2	1	725.0	57.00	65.00	3	2.00	100.00	42.00	4	1	VL ON HIGH
0006	Rte 88			0000	80.0	87/02/09	1	1	1	325.0	72.00	87.00	3	1.00	10.00		124	2	YL
69	106.0069	Rte 88			80.0	87/06/04	1	1	1	302.0	9.00	20.00	3	1.50	3.00		4	2	
106.0053	Rte 88				86/06/15	1	1	1	300.0	8.00	20.00	3		3.00		2	2		
52	106.0052	Rte 88			80.0	86/11/04	1	1	1	482.0	11.00	21.00	3	1.50	2.50		14	2	
106.0104	Rte 88				89/09/01	1	2	1	375.0	100.00	119.00	3	0.50	12.00		1-3-4	2		
106.0113	Rte 88		6	50	90/07/23	1	1	1	100.0	31.00	61.00			30.00		6-2	2		
106.0099	Rte 88				88/10/07	1	1	1	175.0	28.00	43.00	3	1.00	20.00		14	2	YL	
106.0028	Rte 88				85/04/18	1	1	1	162.0	28.00	40.00	3	1.00	4.00		3	2	YL	
106.0114	Rte 88				90/09/20	1	1	1	300.0	35.00	65.00			35.00		4	2		
38	106.0038	cm Rte 88 & Rte 1			60.0	86/04/10	1	2	1	300.0	50.00	67.00	3	1.00	15.00		2-3-2	1	YL
31	106.0031	Rte 88 Exeter Rd			60.0	85/09/30	1	1	1	100.0	25.00	37.00	3	1.00	20.00		2-4	2	YL
30	106.0030	Rte 88 Exeter Rd			60.0	85/09/30	1	1	1	150.0	30.00	47.00		1.00	30.00		1-4	2	YL
20	106.0020	2 Sanborn Rd		33-1	80.0	85/05/17	1	1	1	300.0	8.00	21.00	3		2.75		3	1	
4	106.0004	4 Sanborn Rd		33	80.0	84/08/21	1	1	1	120.0	14.00	21.00	3				3	3	
	106.0087	Surry Ln		34	89/06/05	1	1	1	322.0	31.00	60.00	3	0.75	10.00		2	3		
	106.0102	Surry Ln			89/10/31	1	1	1	406.0	20.00	60.00	3	2.00	4.00		50.00	4	2	YL
	106.0108	Taylor River Rd			90.0	87/04/29	1	1	1	300.0	25.00	41.00	3	1.00	5.00		124	2	
71	106.0071	Victoria Dr		41-6	88/05/31	1	1	1	300.0	6.00	21.00	3	1.00	7.00		12	1	YL	
64	106.0064	Victoria Dr		Lot 2	80.0	86/12/06	1	1	1	300.0	25.00	40.00	3	1.00	3.00		2	2	YL
	106.0077	Victoria Dr		1	80.0	86/12/12	1	1	1	300.0	10.00	25.00	3	1.00	10.00		2-3	2	YL
66	106.0066	Victoria Dr		41-7	80.0	86/12/12	1	1	1	220.0	17.00	25.00	3		15.00		4	2	
67	106.0067	Victoria Dr		11	80.0	86/12/06	1	1	1	250.0	15.00	26.00	3	1.00	1.00		2	2	YL
57	106.0057	Victoria Dr		10	80.0	86/12/02	1	1	1	200.0	8.00	21.00	3	1.00	10.00		2	2	YL
46	106.0046	Heare Rd		32-2	140.0	86/07/28	1	1	1	300.0	95.00	113.00	3	1.00	3.00		1-4-2	2	YL
	106.0042				96/01/01	1	1	1	130.0	15.00	39.00	3	0.50	15.00		10.00	4		

WRB# 106.0074
 ROAD
 MAP
 PARCEL
 ELEV 87/03/16
 USE 1
 RSN 1
 TYPE 1
 TOTD 600.0
 BOXD 48.00
 CASING 61.00
 YTH 3
 YTD 1.00
 YTD 1.50
 SHA 1-4
 OVERBURDEN 1-4
 QC NOTE 2 YL

Attribute	Explanation	Data Type, Codes and Definitions	Data Entry Conventions	Item Number on Well Completion Report
WRB#	Water Resources Board I. D. number	Text 8	[3-digit numeric town code]-[4-digit sequence no.] town code must include leading zeros	
OPT#	Optional number for cross referencing	(Reserved)		
ELEV	Elevation	Real Number	in feet above sea level	
LAT	Latitude	Integer	6 digit number for degrees, minutes, and seconds with leading zeros included	
LONG	Longitude	Integer	6 digit number for degrees, minutes, and seconds with leading zeros included	
ROAD	Address of well location	Text 26	street name or reference point (consult "dictionary" for accepted abbreviations)	2
TOWN	Town in which well is located	Text 22	complete name of town (no abbreviations allowed)	2
MAP	Map page number as recorded on the town's tax map	Text 10	varies according to the coding system in use by a particular town; prefix BLK- indicates block number	2
PARCEL	Parcel identifier as recorded on the town's tax map	Text 12	varies according to the coding system in use by a particular town	2
DCOMP	Date well was completed	Date	6-digit no. for year/month/day with leading zeros included	3
USE	Proposed use of well	Text 1 0=other 1=domestic 2=small community water supply 3=municipal 4=commercial 5=industrial 6=agricultural 7=institutional 8=test/exploration 9=abandoned		4
RSN	Reason for constructing well	Text 1 0=other 1=new 2=replace existing 3=deepen existing 4=provide additional supply 5=monitoring (water level measurement or water quality sampling) 6=stratigraphic observation only		5
TYPE	Type of well	Text 1 0=other 1=drilled in bedrock 2=drilled in gravel 3=dug 4=auger hole (any uncased hole) 5=driven point 6=undifferentiated		6
TOTD	Total depth of well	Real number	in feet below land surface datum	7
BDKD	Depth to bedrock	Real number	in feet below land surface datum	8

<u>Attribute</u>	<u>Explanation</u>	<u>Data Type, Codes and Definitions</u>	<u>Data Entry Conventions</u>	<u>Item Number on Well Completion Report</u>
CASING	Total length of casing installed in well	Real number	in feet	9
YTM	Yield test method	Text 1 1=bailed 2=pumped 3=compressed air		11
YTD	Yield test duration	Real number	in hours	11
YTD	Discharge	Real number	in gallons per minute	11
SWL	Static water level	Real number (0.=overflowing .1=at ground level)	in feet below land surface datum	12
DMEAS	Date static water level was measured	Date	6-digit no. for year/month/day with leading zeros included	12
WQ	Water quality information	Text 1 Y="Yes" Laboratory analysis performed Null value (-0-)="no" or not reported		13
OB	Type of overburden material	Text 16 0=exposed bedrock 1=sand 2=gravel 3=till 4=clay 5=mixed 6=other		15
PI	Pump information	(Reserved)		
QC	Subjective assessment of quality of reported information	Text 1 1=good 2=fair 3=poor		
NOTE	Special notes	Text 36 YL=yield log SN=screen information GP=gravel pack DD=drawdown measurements DL=detailed log CM=comments		

Codes are entered layer by layer in the sequence reported in the WELL LOG; successive layers are separated by a hyphen (for example, 12-4 indicates a sand and gravel layer overlying a clay layer; mixed is used if 1 through 4 are recorded on the same line; if "6" is used, an explanation is included as a comment under the attribute NOTE)

"CM:" is used to explain any attribute coded as "other" [ie., CM:USE(0)=fire protection]

APPENDIX C

[illegible]

APPENDIX D

COMPUTER CODES FOR PESTICIDE USAGE REPORTS

The following are codes for the TYPE of pesticide:

F = Fungicide

I = Insecticide

*NOTE: OIL has been
recorded in gallons.

H = Herbicide

M = Miscellaneous

The following are codes for the CROP:

A = Apples	PND = Pond
AF = Alfalfa	POT = Potatoes
AFB = AirForce Base	PU = Pumpkins
AIR = Airport	R = Raspberries
AW = Aquatic Weeds	S = Strawberries
B = Blueberries	SILAGE = Silage Corn
BEE = Beekeeper	SCH = School
BLK = Blackberries	SF = Small Fruit
C = Corn (Sweet)	SOD = SOD
CEM = Cemetery	SQ = Squash
CEXT = Cooperative Extension	T = Tomatoes
CG = Campground	TF = Tree Fruit
CH = Cherries	V = Vegetables
CRAN = Cranberries	WP = Wood Preserving
CT = Christmas Trees	
EST = Estate	
EX = Extraneous Control	
F = Fruit	
FO = Forage	
FOREST = Forest and Timber	
FW = Flowers	
G = Grapes	
GC = Golf Course	
GH = Greenhouse	
GOURDS = Gourds	
GOV = Government	
H = Herbs	
HOS = Hospital	
INT = Interior Foliar	
L = Lumber & Hardwood	
LAWN = Lawn Care	
LIVE = Livestock	
M = Mosquito Control	
MB = Mixed Berries	
MUN = Municipal	
N = Nursery	
NC = Non-crop	
O = Ornamentals	
P = Pears	
PE = Peaches	
PEST = Pest Control	
PH = Poultry House	
PK = Park	
PL = Plums	

PESTICIDE USAGE REPORT

10/19/92

CODENO.: 3350

TOWN: HAMPTON FALLS

FOR YEARS: 90-91

CROP: CT/EX

ACRES: 5.0

PESTICIDE USED	TYPE	AMOUNT (LBS)
CHLOROTHALONIL	F	4.9
GLYPHOSATE	H	0.3
LINDANE	I	0.5

PESTICIDE USAGE REPORT

10/19/92

CODENO.: 3501

TOWN: HAMPTON FALLS

FOR YEARS: 91

CROP: T

ACRES: NA

PESTICIDE USED	TYPE	AMOUNT (LBS)
BACILLUS THURINGIENSIS	I	3.8

PESTICIDE USAGE REPORT

10/19/92

CODENO.: 3253

TOWN: HAMPTON FALLS

FOR YEARS: 91

CROP: BEE

ACRES: NA

PESTICIDE USED	TYPE	AMOUNT (LBS)
FLUVALINATE	I	1.E-2=0.01
MENTHOL	I	1.9
TERRAMYCIN	I	0.1

APPENDIX E

STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES
UNDERGROUND STORAGE TANK (UST) REGISTRATIONS - ACTIVE FACILITIES ONLY

Inventory for the town of : HAMPTON FALLS

Generated October 12, 1992 at 3:41 PM

#1
 Facility ID#: 0-220133 Facility Name: FORMER J.R. MURPHY LUMBER INC. Street Location: 10 KENSINGTON ROAD St: NH Zip: 03844
 Owner Name: JRM TRUST Street: 10 KENSINGTON ROAD City: HAMPTON FALLS
 Tax Map: 8 Tax Lot: 97 # of Active Tanks: 1

#2
 Facility ID#: 0-111193 Facility Name: HAMPTON FALLS GETTY Street Location: RTE 1 St: NH Zip: 03820
 Owner Name: ROWELL & WATSON CO., INC Street: 547 CENTRAL AVE City: DOVER City: DOVER
 Tax Map: 8 Tax Lot: 55 # of Active Tanks: 6

#3
 Facility ID#: 0-110123 Facility Name: JOHN W & CAROL K DODGE Street Location: 116 LAFAYETTE ROAD St: NH Zip: 03844
 Owner Name: JOHN & CAROL DODGE (AGWAY) Street: 116 LAFAYETTE ROAD City: HAMPTON FALLS
 Tax Map: 8 Tax Lot: 50 # of Active Tanks: 1

#4
 Facility ID#: 0-110303 Facility Name: LINCOLN ACKERMAN SCHOOL Street Location: ROUTE 88 St: NH Zip: 03844
 Owner Name: HAMPTON FALLS SCHOOL DISTRICT Street: RTE 88 City: HAMPTON FALLS
 Tax Map: 8 Tax Lot: 27, 28-2 # of Active Tanks: 1

THE INFORMATION BELOW PROVIDES MORE DETAILED DATA ON THE SITES LISTED ABOVE.

UNDERGROUND STORAGE FACILITIES IN ROCKINGHAM COUNTY - 05 DEC 1989

TANK.....	Facility Location City	Facility Location Name	Facility Location Street	Facility Owner Name	Facility Owner Phone Number	Tank Capacity	Tank Description	Tank Status	Product Description	Tank. Monit Filled Tank	Test Wells Flag	Reov'd
01111931001	HAMPTON FALLS	HAMPTON FALLS BETTY	RTE 1	ROWELL & WATSON CO., INC.	(603) 742-2418	10	4,000 Now In Use	Now In Use	Petroleum - Gasoline			
01111931002	HAMPTON FALLS	HAMPTON FALLS BETTY	RTE 1	ROWELL & WATSON CO., INC.	(603) 742-2418	10	4,000 Now In Use	Now In Use	Petroleum - Gasoline			
01111931003	HAMPTON FALLS	HAMPTON FALLS BETTY	RTE 1	ROWELL & WATSON CO., INC.	(603) 742-2418	10	4,000 Now In Use	Now In Use	Petroleum - Gasoline			
01111931004	HAMPTON FALLS	HAMPTON FALLS BETTY	RTE 1	ROWELL & WATSON CO., INC.	(603) 742-2418	01	4,000 Now In Use	Now In Use	Petroleum - Diesel			
01111931005	HAMPTON FALLS	HAMPTON FALLS BETTY	RTE 1	ROWELL & WATSON CO., INC.	(603) 742-2418	01	1,000 Now In Use	Now In Use	Petroleum - kerosene			
01111931006	HAMPTON FALLS	HAMPTON FALLS BETTY	RTE 1	ROWELL & WATSON CO., INC.	(603) 742-2418	01	2,000 Now In Use	Now In Use	NEW OIL			
02201331001	HAMPTON FALLS	JAMES R. MURPHY LUMBER INC.	10 KENSINGTON ROAD, PO BOX 279	J.R. MURPHY	(603) 926-2265	20	500 Now In Use	Now In Use	Petroleum - Gasoline U			
02201331002	HAMPTON FALLS	JAMES R. MURPHY LUMBER INC.	10 KENSINGTON ROAD, PO BOX 279	J.R. MURPHY	(603) 926-2265	19	2,000 Now In Use	Now In Use	Petroleum - Diesel U			
01101231001	HAMPTON FALLS	JOHN W & CAROL K DODGE	116 LAFAYETTE ROAD	JOHN W & CAROL K DODGE	(603) 926-2529	0	12,000 Now In Use	Now In Use	HEATING OIL			
01103031001	HAMPTON FALLS	LINCOLN ACKERMAN SCHOOL	ROUTE 88	HAMPTON FALLS SCHOOL DISTRICT	()	0	After 5/8/85		FUEL OIL			

NOAA COASTAL SERVICES CTR LIBRARY



3 6668 14111879 6
